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COMMITTEE PRINT

INFANT MORTALITY WITHIN MINORITY AND RURAL COMMUNITIES: A GLOBAL PERSPECTIVE ON CAUSES AND SOLUTIONS

A SYMPOSIUM SPONSORED BY THE

SELECT COMMITTEE ON HUNGER
U.S. HOUSE OF REPRESENTATIVES

AND THE

NATIONAL COMMISSION TO PREVENT INFANT MORTALITY

OCTOBER 15, 1990

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LETTER OF TRANSMITTAL

HOUSE OF REPRESENTATIVES,
SELECT COMMITTEE ON HUNGER,
Washington, DC.

To Members of the Select Committee on Hunger:

I am pleased to transmit to committee members the enclosed committee print detailing the events at a joint symposium sponsored by the Select Committee on Hunger and the National Commission to Prevent Infant Mortality. The symposium was entitled "Infant Mortality Within Minority and Rural Communities: A Global Perspective on Causes and Solutions," and was convened to explore a variety of community-based domestic and international interventions designed to reduce the high infant mortality rates within high-risk populations. Experts and policymakers from international and domestic maternal child health arenas addressed low-cost measures such as oral rehydration therapy (ORT) and breast feeding which are widely practiced in other countries but not in the United States, and have been shown to have a significant impact on infant mortality rates in these countries. Practitioners from the rural South shared their expertise and lessons learned from home visiting projects designed to increase access to pre- and postnatal care of women in their communities.

It is well documented that the infant mortality rate among low-income, minority, and rural populations has been consistently higher than that of the majority population. Consequently, it is appropriate that efforts to reduce the Nation's infant mortality rate focus attention on these high-risk groups. In keeping with the Select Committee on Hunger's investigation of hunger-related issues affecting society's most vulnerable populations, this committee print provides needed information to the Congress and to those actively engaged in the battle against one of our Nation's most preventable ills.

Sincerely,

TONY P. HALL, *Chairman.*

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INFANT MORTALITY WITHIN MINORITY AND RURAL COMMUNITIES: A GLOBAL PERSPECTIVE ON CAUSES AND SOLUTIONS

MONDAY, OCTOBER 15, 1990

House of Representatives,
Washington, DC.

The symposium sponsored by the Select Committee on Hunger and the National Commission to Prevent Infant Mortality met in room B-338, Rayburn House Office Building.

OPENING STATEMENT OF RAE GRAD, EXECUTIVE DIRECTOR, NATIONAL COMMISSION TO PREVENT INFANT MORTALITY

Ms. Grad. I'm going to get started, it's just a couple of minutes after 9 o'clock, and some people may trickle in. For a foggy Monday morning this is not a bad start to the week. This is going to be an interesting week due to the budget and some of the committee conferences. Those of us who are working on mother and baby issues have a lot to watch out for.

I am Rae Grad, Executive Director of the National Commission to Prevent Infant Mortality. I have been working on this issue for what I think is my entire adult life. I don't get disappointed, I just get worried sometimes that we are not making as much progress as I would like to see. So, it is symposiums like this, that can help keep us on track. Now your assignment is not just to take in what you hear today and assimilate it and then keep it at that. You really have to become the ombudsmen for the people out there who don't yet understand what to do. So if you could, take a very serious assessment of what you think is the potential of what you learn today, and more importantly, who you can tell it to. I think that's the way I would like to start the morning. You are here to learn, to absorb, but more importantly, you are here to spread the word. That's your assignment.

We are very, very, honored today to have two leaders in the area of promoting the health of mothers and children. Congressman Tony Hall from Ohio is here. He is the Chairman of the House Select Committee on Hunger. And with him is Congressman Bill Emerson of Missouri who is the Ranking Minority Member of the select committee. Both are here to bring you greetings.

Congressman Hall has long been an outspoken advocate for reducing world hunger and has initiated successful legislation pertaining to many hunger-related issues; many of which involve the health and welfare of mothers, infants and children. As many of you know, the Speaker of the House appointed Congressman Hall, Chairman of the House Select Committee on Hunger following the tragic death of Congressman Mickey Leland. Recently, the New York Times called the House Select Committee on Hunger the conscience of the Congress. I have had the pleasure of working with this committee and can agree with that statement. The work of the committee under Mr. Hall transcends partisan politics thanks to the efforts of Congressman Bill Emerson.

Earlier this year, Mr. Emerson pledged and succeeded in enlisting conservative republicans to support the Mickey Leland Memorial Domestic Hunger Relief Act; the food and nutrition component of the 1990 farm bill. The efforts of both Congressman Hall and Emerson against hunger and poverty have been nationally and internationally recognized. We are delighted to have them both with us this morning. We'll start with Mr. Hall.

STATEMENT OF HON. TONY P. HALL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

Mr. HALL. Well thank you Rae. Ladies and gentlemen, friends, it's good to be here with you. I'm glad to be back in Washington. I was home over the weekend and I can tell you it's rough out there.

I'm particularly happy to be sponsoring this symposium with Rae Grad and the National Commission to Prevent Infant Mortality. The work that the national commission does is very important for all of us, not just children. I'm glad they joined us today, especially in this setting.

Too often hearings seem to be the only vehicle Congress uses to get information to help it do its work. Don't get me wrong, I have nothing against hearings, but workshops and seminars can allow a more intimate exchange of information, because they allow people to really get to know each other, to work together, and to hopefully come out with information that can be used to aid all of us in our efforts to assist those that need our help. In a hearing, the members are the only ones that get to ask questions. I hope everybody participates in asking questions today.

The Hunger Committee is uniquely qualified for just this type of event. We are charged with educating the Congress about hunger and hunger-related issues. Many of the hunger-related issues we explore are what we call issues without borders. Infant mortality is one of those issues. The pain and suffering resulting from the death of an infant knows no boundary. So we are here today to examine why 40,000 babies die each day around the world, and why the majority of those deaths in this country are within minority and rural communities.

But if the tragedy of infant mortality crosses all borders, so do the means to prevent it. According to a draft report by the White House Task Force on Infant Mortality, "by applying the knowledge we already have, this country can prevent an additional 10,000 infant deaths and an estimated 100,000 disabling conditions in newborns."

Some of this knowledge consists of simple, relatively low-cost interventions like breastfeeding and oral rehydration therapy that are practiced extensively in other countries, but not as much here at home. In other cases, strategies such as homevisiting, a concept where persons much like extended family members or nurses reach out to pregnant women and infants to encourage the health care so crucial to averting the tragedy of infant death. In this day and age—and especially in this budget climate—we need to explore creative ways of addressing problems. Breast feeding and homevisiting are creative, innovative, and low-cost ideas that are saving lives overseas. They should save American lives as well.

So today, we're going to share ideas. The list of panelists is very impressive and I am encouraged by the commitment to this issue of the panelists and of those of you in the audience who chose to be here this morning.

Thank you.

STATEMENT OF HON. BILL EMERSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSOURI

Mr. Emerson. I am also very pleased to have this opportunity to be with you this morning as you discuss and address this extremely important subject. I think Tony has made an extremely important statement on which we all ought to focus. I don't think our problem in addressing the subject of infant mortality is a lack of resources. I do think it is one of knowledge—but better coordination and better cooperation in targeting resources which through the Government and through the private sector are available if we're all alert.

Infant mortality is the most sensitive indicator of our children's health. It serves as a barometer of how effectively we're meeting the needs of our country's most helpless, our children. Just last month it was interesting, to note, that in a report issued by the Department of Health and Human Services, it was stated that the U.S. infant mortality rate dropped to its lowest level ever. But this rate is still higher than that in any other developed nation. Nations such as Canada and Japan and it continues to be much higher for black babies than for white babies. In 1989, the overall infant mortality rate was 9.7 per 1,000 live births, 2 percent lower than the rate in 1988. For black babies however, that rate was 17.9 per 1,000 live births, with low birth weight being the primary cause of death. Now the disparity is attributed to the lack of prenatal care, poor nutrition, and other factors related to poverty and unfortunately, but in truth, drugs are a big part of the problem these days and we've got to find a way to address that problem and save the children from that. The report estimates that one-fourth of the infants who die before their first birthday could be saved by adequate prenatal care for high-risk mothers.

Now today we have gathered experts from all fields to exchange ideas and suggestions as to how we can better combat infant mortality within rural and minority communities. I am certainly looking forward to reviewing the statements and recommendations that you all come up with today. I think that this is an excellent opportunity for us to focus and bring attention in this problem area. I hope you can give a lot of attention to the challenge that Tony gave you in his statement as how we can better coordinate and cooperate and get us all moving in the same direction as we address this, one of the most serious problems that we have in our society today. Thank you all for your interest and participation and commitment. We look forward to not only what you do today, but to your continuing efforts and to working with you. Thank you very much.

Ms. **Grad**. Thank you. Well from the top levels of Congress, we now move to a national and international perspective of the infant mortality problem. I'm going to ask for the first panel to step forward unless there are any questions any of you would like to address to either Mr. Hall or Mr. Emerson. This is your moment. I don't want to put you on the spot, but if you have any questions about any of the current legislation moving through the House Select Committee or how to solve the budget crisis. No big answers. OK, could I ask Dr. Robinson, Dr. Aiello and Dr. Huffman to come forward.

While they're doing that, I want to extend my thanks to Syntex for underwriting this symposium. It's support from the private industry such as Syntex that we all need. We can not do it on Government dollars and our own dollars alone. So we thank you Syntex very much for allowing us to come together.

I also want to bring you greetings from Senator Chiles who is the chairman of the National Commission to Prevent Infant Mortality. For those of you who are watching politics, Senator Chiles is otherwise engaged today, but we'll see what happens. I also want to thank the members of the administration who are here as well as some of the congressional staff for taking the time to come to listen to our speakers today.

Our first panel will provide an overview of the factors which influence the high rate of infant mortality in both minority and rural communities, the Federal initiatives that currently exist to address the problem, a brief examination of the factors which influence infant mortality in developing countries, and interventions that may hold some potential for reducing infant mortality in this country. I'm a strong believer in looking outside of our boundaries to see what we can better do within our boundaries.

On our first panel we have Dr. William Robinson, the current Director of the Office of Minority Health for the U.S. Department of Health and Human Services. Dr. Robinson has a long history of experience and commitment to public health issues and in particular to those issues that affect minorities. This history includes among many other positions, serving as the chief medical officer of the Health Resources and Services Administration and also as a member of the Secretary's Task Force on Black and Minority Health. Next, we will have Dr. Marilyn Aiello, the Director of the DePorres Health Center in Marks, Mississippi. Dr. Aiello is a family practitioner and founded the DePorres Health Center approximately 10 years ago. This was at a time when health services were virtually nonexistent in Quitman County, Mississippi, the location of her center. Dr. Aiello provides medical services to persons in the surrounding rural communities including pre- and postnatal care to women and teens. She is also a clinical instructor in the Department of Family Practice at the University of Mississippi Medical School. Dr. Aiello has been involved in providing community health services for a long time. I'm sure she will have much to say on providing adequate health care to women, infants and children in under-served rural areas. Our third panelist will be Dr. Sandra Huffman. Dr. Huffman is the president of the Center to Prevent Childhood Malnutrition. As president of the center, Dr. Huffman seeks to promote low-cost ways to improve infant and child feeding and maternal nutrition in the United States, South America, and Africa. The center works primarily with local resources, helping communities improve the lives of their children through community designed field projects and nutrition education. Dr. Huffman's professional experience is extensive. It includes, serving as an associate professor with the John Hopkins Department of International Health, serving as a nutrition policy analyst with the Office of Policy, Planning and Evaluation, and with the U.S. Department of Agriculture and as a guest investigator with what is now the International Center for Diarrheal Disease Research in Dhaka. We are very pleased to have these members of the panel with us. They are all going to present one after another and at the end of their presentations we will have time for questions from the audience.

Dr. Robinson.

STATEMENT OF WILLIAM ROBINSON, M.D., DIRECTOR, OFFICE OF MINORITY HEALTH, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Dr. Robinson. Good morning. On behalf of minority people all over the country and the world, I want to thank Congressman Hall, Congressman Emerson, the staff of the commission, and Rae Grad, you in particular for convening this group. I think it's a very important and critical topic and I think its one that again not enough has been done to raise the attention of people all over the country. In particular, Rae asked me if I would try to give you a brief overview on some of the factors which influence infant mortality rates in minority communities and then to follow up with just a little bit about what the Office of Minority Health has been doing. In terms of time, because I recognize the expertise of so many of the people who are going to follow me, I'm not going to go into too much depth on many of these issues. In fact, what I was going to try to do is even speed through my portion of it, because I think its also appropriate that we as panelists have a chance to hear from you in terms of some questions and answers about some of the things we've said or perhaps not said. So with that, let me begin.

First of all, as you know, for as long as we've been collecting health statistics and this goes back into the 1950's when we established the National Center for Health Statistics, but even before then, as long as we've been documenting births and deaths, we've known about the disproportionate impact of infant mortality especially among blacks, American Indians, Alaskan natives, and some hispanic populations. More recently in 1985, when the Secretary's task force report on Black and Minority Health was issued, we noted that approximately 30 percent of the 60,000 excess deaths which occurred among blacks at that time were due to infant mortality. As Congressman Emerson just pointed out, the numbers have not really declined. We still have disproportionately an infant mortality rate, among blacks in particular, twice as high as the rate for whites. The rates for other racial ethnic minorities are small, but there are some groups, in particular, the Puerto Rican population and some American Indian and Alaskan native tribes that have rates which are still significantly higher than the national average. Of all the infants that die, about 60 percent are of low birth weight. Black and Puerto Rican babies unfortunately are disproportionately reflected in this group. We don't know all the factors that result in or predispose women to having low-birth-weight infants, but we do know some of the contributors. Again, as the Congressman pointed out, effective prenatal care that begins in the critical first trimester has been achieved by disproportionately fewer black and other minority women. Of nonminority mothers, 80 percent are able to get care in this first trimester, but only 60 percent of minority women.

Many risk factors that are associated with poor perinatal outcomes among minorities appear to be related to low socioeconomic status. These things include, low income, inadequate insurance coverage that often reduces the access to appropriate medical care, pre-existing disease conditions, poor nutrition and again, for those of you who have been working with the Select Committee on Hunger, that's particularly appropriate that it be reflected here, inadequate housing and crowded living conditions, limited maternal education, stressful work environments, disruptive families and lack of social support and problems with transportation and child care that actually impede the use of these services. All of these problems are more prevalent among the poor, and among minority women and their families.

In addition to these factors, though there are other factors as you know that contribute to the adverse birth outcomes, there are many behavioral problems that have historically been a plague on women. Smoking in particular is something that we know we can do more about, but unfortunately, we at times, appear to be losing ground in terms of the number of women who are engaged in smoking behavior. And again, this is for minorities as well as nonminorities. Alcohol and drug use, poor nutrition, sexually transmitted diseases, and the disproportionate number of adolescents who are bearing children also contribute to adverse birth outcomes. I've got some statistics that I think I want to pass on in terms of smoking, alcohol, and drug abuse. Just a couple of quick points though. You know that there has been a move in this country to get more and more people to stop smoking, however, the tobacco industry has pushed more and more to get certain targeted groups to smoke. Unfortunately, those targeted groups are minorities, they are women, and they are young children, preteens as well as teens. And sometimes it seems as though we're losing the battle, but we're going to keep it up and with your help and others, we're going to win that one.

In terms of alcohol, that has been a historic problem, and it's not a minority problem per se, it's a problem for women regardless of race ethnicity, but unfortunately, fetal alcohol syndrome for example, is present in an estimated 3,600 to 10,000 infants annually. The rates for fetal alcohol syndrome for American Indians and blacks appear to be much higher than for whites; for American Indians, up to 33 times higher than the rate for white babies, and for blacks, 7 times higher. These are significant problems even though they occur across the board, disproportionately effecting certain minority populations. The Congressman also pointed out the problems of drug abuse. That has added to the crisis in this country in that just as it seemed as if we were starting to make some headway, we've run into problems with heroin, cocaine, crack, and other problems which try to undo all that we've tried to do. Let me just stop talking about some of those problems, because again you'll hear more about that and just briefly try to share with you some of what the Office of Minority Health's role is in terms of trying to address some of this.

First of all, to give us some perspective, we are a small office in the Office of the Assistant Secretary for Health. Our principle mission is to stimulate the development of programs to coordinate, monitor, and advocate for minority health. We don't have a large budget, we don't have a large staff, but we do have the influence and support of the Assistant Secretary for Health, the agency heads, one of whom is here today, Bob Harmon from the Health Resources and Services Administration. We have support from the staff of the Public Health Service and that is the principle mechanism by which we have to exert our influence. In addition though, we do have both formal and informal ways of trying to accomplish things. Dr. Harmon's office is the lead agency for the Public Health Service's Interagency Committee on Infant Mortality and my office is represented. I personally sit on that group, and informally through a number of staff interactions we have with the Maternal and Child Health Bureau, I note their Deputy is here today, Ms. Florence Fiori, and we have a number of other folks who again try to help us and support us as we try to help work with anyone who is interested in doing something about infant mortality.

We have a couple of small grant programs. But it's not small in terms of what the effort is, because the effort is one that picks up with some of what Congressman Hall talked about and that is, we have to do more to enter into partnerships and work collaboratively with other people who have the same kinds of interests and concerns about infant mortality. So, with that, we're trying to set up some networks. In particular, I've taken the initiative to try to establish a better liaison with both our regional offices, State offices of minority health and others in State and local government. Ohio and Missouri are two of the States, two of the few States which have established an Office of Minority Health. There are only a handful of States which have done that so far and again both Missouri and Ohio are two of those who need to be commended for that. Part of what we're going to try to do over a period of time is to enhance our relationship with organizations like the March of Dimes, like this particular commission, the Association for the Care of Children's Health and others. One thing that I want to leave you with is something that I think we have from a Federal perspective that I think we need to share more of.

As I was trying to prepare for this discussion I had a chance to look through some of the statistics that are available in terms of incidence of infant mortality and a series of other problems. We through the National Center of Health Statistics and other programs have a large body of data, that we use as we talk about problems that exist on the national level. We also rank our States so that we can see which of our States are doing better than others with respect to problems like infant mortality. The other point that Congressman Hall and Congressman Emerson would like for us to think about though is in terms of these partnerships we've got to target as far down the pipeline as possible. Not to look just globally, or at the national level, not to look even at the State or counties, but to look at particular communities. What happens then is we're able to target more specifically our resources and our energies and better define the folks on the other side whom we are trying to solicit as partners. It's one thing to try to do it where we're involving people only at the Government level, but you've got to work with the community base.

Part of what we're going to do with our grants is to help make the communities more receptive to programs from organizations which they have not necessarily aligned themselves as partners, and hopefully hand-in-hand, people reaching from both sides will be able to accomplish a lot more. So we're going to work with the media, religious institutions, community-based organizations, school systems, and a variety of others and we're hoping that we can work with you in that regard. Thank you.

STATEMENT OF MARILYN AIELLO, M.D., DIRECTOR, DePORRES HEALTH CENTER, MARKS, MS

Dr. Aiello. Congressmen, distinguished guests, it is certainly a privilege for me to be here, a small-town country doctor. Actually I taught here in Washington 22 years ago. And ironically, I want you to think about this, the poor people's march on Washington was 22 years ago. That march began in Marks, MS where I am now. That was the group that started out by mule train. And its through irony I find myself back in Marks, MS, Quitman County, which is one of the poorest counties in Mississippi and in the Nation. It is my privilege to practice medicine in Mississippi. You can probably tell from my accent I am not from the South. I was born in Chicago and have lived in many big cities.

I definitely feel that there are unique factors affecting rural America and in particular babies born in rural areas. In 1982, Mississippi, a predominately poor rural State had one of the highest infant death rates in the Nation, 15.4 deaths per 1,000 live births. Through statewide efforts, private physicians, health departments, and educators, this rate declined 12.3 in 1986. Unfortunately, it is now again rising. This increase is reflected both in white and nonwhite populations. However, according to Mississippi vital statistics, the number of nonwhites, that is, predominately black births is double than that of whites. Births to black mothers under the age of 15 is 6½ times greater than that of white mothers and between the ages 15 and 19 it is double. Of greater significance, almost double the number of black children die as compared to white, and equally depressing, are the number of babies born retarded or severely handicapped. Estimates are that for every one of the 629 who died in Mississippi in 1984, three times as many were born severely handicapped. I do not have statistics, but I'm daily appalled by the number of babies that come to my office retarded, and not just babies, children, retarded or with seizure disorders. The cause of such high infant mortality and morbidity in rural areas are multiple. I would like to concentrate on a few of these factors which I think are critical and basic, and include some possible strategies to combat these negative factors.

To begin with, the obvious risk factor is poverty. It has been said that in Mississippi the greatest boom to the economy is the welfare system. Our poverty is the grinding poverty of generation after generation. Yes, this has been fueled by racism, but also fueled by the Federal Government policy of punishing poor husbands and wives who try to live together and by withholding AFDC and medicaid, and by punishing single mothers who get minimum wage jobs by dropping their medicaid health benefits. It is also fueled by the collapse of the farm economy with little or no industry to take its place. Poverty also finds young mothers to be in crowded unsanitary conditions. We still find dirt floors and no inside plumbing in the Mississippi Delta. We need to encourage industry to locate in rural areas and provide adequate housing. The poor rural woman is at a great disadvantage when it comes to transportation. I am in a county of approximately 15,000 people. The county is about 25 miles long and 15 miles wide. The only health care services available in the whole county are in the county seat of Marks. And even these babies are not delivered. I did deliver babies when I first came to Marks. I was alone in my practice and as my practice grew, you know babies have a way of starting up at night and coming out at night, and I was up day and night. The closest obstetrical group is more than 30 miles away from many women and many of these women have no transportation. They would have to pay someone to take them in for prenatal care.

In the obstetrical clinic serving the four-county area in which I work, I asked them and they said every day 40 to 50 percent of the appointments fail to show. Of the failed appointments, 80 percent are due to lack of transportation. Midwives in our area are a thing of the past. The old general practitioners are dying off. Young physicians are not coming to practice in rural areas. Mississippi has the lowest occurrence of physicians in the United States; 122 physicians for every 100,000 people in the population. In poor rural counties such as the one in which I practice, the majority of the reimbursement comes from medicaid and medicare. Yet rural areas receive less reimbursement than urban areas. This is also true of hospitals which are struggling to stay open. I travel a minimum of 50 miles a day and often two or three times that amount depending on how often I have to go to the hospital. It is no wonder rural areas can not attract new physicians and that hospitals are understaffed and not equipped to care for high-risk babies. We need to support and encourage practitioners to go into rural areas so that health care is more accessible. We need to support regional hospitals so that they can provide high quality care for our babies.

Finally, I'd like to touch on education. In preparation for this talk I called the local middle school principal and asked what programs they had available for sex education. She said none. She said that there was a nurse from a high school that came on a regular basis and used a questionnaire to ask how many children were sexually active. She was not sure what was done with these questionnaires. She said that young women who were pregnant, were counseled by the nurse. At present, the principal knew of one fifth grader who had just delivered a baby at age 11. Another 11 year old who was pregnant had left school and they could not locate her. I myself had an experience with a 12 year old who had been treated for syphilis 3 days before coming to my office. She had been to school on the day she came to see me, but she called her mother to come get her because she had a back ache. Her mother felt that the syphilis shots may have been to blame. When I examined her, I found out she was in labor. Both she and her mother denied any possibility of her being pregnant. But it is not just the young, a 45 year old obese woman came in not long ago complaining of lower abdominal pain. When I put her up on the table, her water broke, baptizing me. Between her tears and my mopping up she insisted she did not know she was pregnant.

We talk about the need for education, but I can not believe we are making any head way. The incidence of serious venereal disease is steadily rising along with the increase in birth rate. I shudder when I think of the implications for health of the newborns in the future. When I first came to Marks, I would rarely see a case of syphilis, maybe once a month, once every 2 or 3 months. Now a week does not go by that I do not treat, not counting the health department, treat four or five cases of syphilis every week. Education, good education is a must. A must to give hope, to give a way out of ignorance so that good choices can be made. We need to help to instill pride and responsibility in father, mother, children, and home. I believe when we help families to reach the first rung of the ladder they will want to climb higher on their own and this will do more to limit family size, decrease teenage pregnancy, and infant mortality than all our preteen band-aid approaches combined.

I thank you.

STATEMENT OF SANDRA HUFFMAN, PRESIDENT, NATIONAL CENTER TO PREVENT CHILDHOOD MALNUTRITION

Ms. HUFFMAN. I'd like to thank the select committee and the commission for organizing this workshop. Today I'd like to talk a little bit about some experiences we have in developing countries, both in coordinating political will to end problems of mortality in the developing worlds and also some of the interventions that have been used. I apologize, but to show the slides, the lights are going to have to go off. In developing countries the major causes of infant mortality include diarrhea; this slide shows that in Africa for example, a child will be ill of diarrhea 26 days out of his life compared to children in the United States of about on average 6 days.

Aside from diarrhea, we have acute respiratory tract infections. In fact, in the United States the rates of children with respiratory tract infections are similar to children in the poor countries in the developing world. However, acute lower respiratory tract infections are much more common and also children are much more likely to die from these. In addition, vaccine preventable diseases cause a major proportion of the infant deaths in developing countries. These include measles, tetanus, diphtheria, pertussis, and others.

And of course malnutrition is a major determinant of mortality. This is the kind of severe malnutrition that is often related to infant feeding practices, but also malnutrition is related to low-birth weight and to just chronic under-feeding.

So what I want to talk about are a few of the interventions that have been promoted in developing countries that have had a major impact on reducing mortality over the last 10 to 15 years. Breast-feeding is quite prevalent in most of the developing worlds and a recent analysis done by the Center to Prevent Childhood Malnutrition has shown that currently there are 9 million infant deaths in the developing world and there would be an additional 7 million deaths if there were no breast feeding. In other words, breast feeding plays a major role in reducing infant mortality in developing countries. This slide shows that we can still improve breast feeding in the developing world as well. But if more women were to exclusively breast feed through the first 4 to 6 months of life and to breast feed through the first 12 months, we would save an additional 1.5 million deaths just from reductions in diarrhea and acute respiratory tract infections referred to as ARI.

So we have a major way to go in terms of breast feeding as well in developing countries. In the 1970's we saw major declines in breast feeding associated in part with increases in urbanization. As mothers started delivering in hospitals and urban centers they were confronted with western medicine and what did they find? They found that they were separated from their infants from birth. The infants were given glucose water or infant formula. They left the hospital without any instruction on how to breast feed, and since they didn't have their normal support system that they found in their rural communities, they didn't know how to solve some of the problems associated with breast feeding. This is a major factor that we see in this country as well.

One of the interventions that we've seen in developing countries has been to try to promote breast feeding in countries where its declined and to support it in areas where its not being practiced as it should. Part of this includes instruction. It's now common knowledge that breast feeding is not just an instinctive act. In fact, women need to be taught how to breast feed. There are many problems that can arise, so there's a real need for support for the breast feeding mother. Much of the support in urban areas will come from the health professionals. Health professionals can have a major impact on reducing the woman's ability to breast feed, because when they've been educated in western techniques they don't know some of the problems and how you can solve problems associated with breast feeding. In fact, if you look at a western medical text you'll see that there's more information on how to prepare a bottle than on how to effectively help a mother to breast feed. A program supported by the U.S. Agency for International Development in Honduras is a good example of how breast feeding promotion can work. In Honduras there is a nationwide program that primarily focuses on the training of health professionals as to the benefits of breast feeding and how to promote breast feeding. This lead to changes in hospital practices, including rooming-in so that mothers following the intervention were more likely to stay with their infants. Health professionals were much more likely to recommend breast feeding.

From 1982–85 during this project, there was a substantial increase in the proportion of physicians and nurses recommending breast feeding to their infants. In this study, the rates were nearly double, but also in reducing morbidity and mortality. We've seen this a lot especially in hospitals. Costa Rica is a very good example of hospital-based morbidity and mortality rates associated with just breast feeding. When breast feeding increased, morbidity and mortality within the hospital during the first few days of life primarily due to diarrhea decreased substantially. And we have a lot to learn from the experiences in developing countries. I recently got back from Honduras where hospital practices are better than we see here in the Nation's Capitol. If you go into hospitals especially hospitals dealing with low-income mothers, breast feeding practices are atrocious. Children are separated from the mothers, the mothers are not given any information on breast feeding or if they want to breast feed there's no one in the hospital who can help them with problems. Children are given bottles, glucose bottles or infant formula. The mother leaves the hospital not knowing how to breast feed or not having been given any encouragement. And its mothers that leave the hospital without having a successful experience, where the likelihood of being able to continue breast feeding during the first month of life is very much reduced.

So we have a long way to go in this country in particular, and I find it amazing that in the developing world we've come much farther in relation to hospital practices. In this country we do not know what hospital practices are like in relation to breast feeding. We don't know what information physicians and nurses give or what they were given. And in the District of Columbia, the Commission to Promote Breast Feeding did a study recently, and we saw differences in breast feeding rates such as 10 percent at D.C. General up to 90 percent at Georgetown. So there's a wide variation. There are very few studies that have really shown what the practices are and there's very little coordinated effort to promote breast feeding among hospital practitioners. The WIC Program has much to learn from this experience. As you know, over one-third of all WIC expenditures go to infant formula purchases and only a minuscule amount is spent on breast feeding promotion. Even though we know in this country as well, that morbidity from illnesses such as ear aches, lower respiratory tract infections, diarrhea, hospital admissions, and a total episode of illnesses are less among breast fed infants.

I was coming in on the Metro today, I heard a woman who was talking about her child who is hearing impaired because of a severe ear infection during early infancy. How much of this can we prevent if we had more promotion of breast feeding rather than promotion of formula.

OK, the next thing I want to talk about is the oral rehydration solution. Oral rehydration solution is a treatment for diarrhea to prevent dehydration. A major cause of death from diarrhea in developing countries or throughout the world is from dehydration. The child loses too much water and electrolytes and can quickly die. In developing countries a new intervention has been developed over the last 15 years called oral rehydration solution or ORS. When I was working in Bangladesh 15 years ago, ORS was just being tried in the communities where I was working. They were just starting to see if they could train mothers to use ORS and train physicians to use it and now only 15 years later 60 percent of the developing world has access to ORS. This has grown tremendously and much because of political will, because of part of our emphasis and our focus on it by rural international organizations and also because of intensive training of health practitioners to show that it in fact works.

ORS as with breast feeding could also have major impacts on reducing hospital costs. In one hospital in the Philippines it was estimated that over $360,000 per year would be needed if they were to revert to normal practices prior to when they had rooming-in. In terms of breast feeding, it has been estimated that over $500 million could be saved annually in the United States if ORS was used for treating diarrhea. Annually there are about 200,000 cases of admissions for diarrhea into hospitals and most of these cases are treated with an I.V. solution which is much more costly and also much more dangerous for children to reach that stage of severe dehydration.

This is a slide, I just wanted to show you what a dehydrated child looks like. This is a Bangladeshi child. Much of the effort had to go into educating health professionals because when you see a child this severely ill the immediate response is to put in an I.V. because he's so close to death. The next slide shows the same child 6 hours later having taken only ORS solution. In other words, it could have a dramatic impact. If we can teach illiterate women in Bangladesh in communities far away from any kind of resources, we can certainly train health professionals here to use ORS in out patient wards and we can teach mothers to use it in their homes before the child becomes severely dehydrated. I think this is really important as you listened to Dr. Aiello on the problems of children getting to services. If there's ORS packages or bottles available in the house and the child gets diarrhea, the mother can give this to the child before he develops severe dehydration.

Another recent effort in the developing world that also holds promise here in the United States is a cereal-based rehydration solution. One of the problems with ORS has been it doesn't treat the diarrhea. A child who gets diarrhea gets the ORS to prevent the dehydration but the child's diarrhea continues. And its very hard to convince mothers that this is working because its not treating the diarrhea. However, cereal-based oral rehydration solution in fact shortens the duration of diarrhea so it does have major possibility in both the United States and developing countries.

This slide goes onto the next intervention that I wanted to talk about which are immunization campaigns. In developing countries since the early 1980's only 10 to 20 percent of children have been fully immunized against vaccine-preventable diseases. And now in only 10 years we see in most of the developing world 67 percent of children are fully immunized by vaccine. In some countries such as Zambia and Pakistan you see 80 percent coverage. How does this compare to what we have in the United States? We look at a non-white toddler in the United States, only 67 percent are immunized against polio. Substantially lower rates than the white community. So we really have farther to go here than we have to go in countries as poor as Zambia. What has been some of the impetus in immunization in the last 10 years that's been so successful? One has been mass immunization campaigns. This has been used in Peru, Brazil, Guatemala, and many parts of the world where one day is set aside for immunization and so there's much political will. There's a lot of media coverage, a lot of politicians talking about the importance of taking a child to immunization and this has really created a real sense of understanding of the importance of immunizations and it has gotten resources behind it.

In addition to this intervention, it has also been used whenever a child comes to a clinic for illness and, of course, that's most frequently when mothers will bring their children. The child will take it for treatment, that they don't miss that opportunity. This opportunity is a new slogan in terms of immunization coverage so that whenever a child comes in, his immunization record is checked because there's very few counter-interactions to immunization. Additionally mothers are given in many parts of the developing world growth charts or immunization cards which record what the schedule of immunization is, and what the child has, and if the mother is in control of knowing how her child is growing and what immunization he's received. So depending on what clinic they go to they can take the card and the health worker will know if he needs another immunization. Recently I was in Guatemala, and there they focus on breast feeding as a first vaccine. The first milk produced during pregnancy is called colostrum and that colostrum has very high anti-infective properties so they've started including breast feeding as the first immunization that a child receives because of its protective effect; again emphasizing the importance of breast feeding during the first few days of life.

The last intervention that I want to talk about is the role of community health workers.

Community volunteers have been used in many parts of the developing world over the last 10 to 15 years in part because of the promotion of the focus of primary health care and health for all by the year 2000. There are women in Guatemala that have been trained to provide breast feeding support for women in the communities, but they also provide referrals for immunization information or the use for ORS, and referrals for prenatal care as a way of having community mothers help other mothers in their area. In Mexico there is a program that trains neighborhood women in all of these, but also to promote efforts to curb drug abuse. In Bangladesh there's a major program of urban volunteers training the poorest women in the Bastes and I'm sure you've seen some of the slides of the really poor conditions some of them are living in. But these women have been trained, and the impact of course has been on health but it has also been on the women themselves. Because what you see is when you give women the opportunity to help others in the community instead of outsiders going in and promoting changes, this could have a major impact on their power and their status and on their self-esteem.

There are a group of women in rural Tennessee working with the Tennessee WIC Program. The Center to Prevent Malnutrition has a joint program with the Tennessee WIC agency where we're supporting low-income women to develop their own peer support group to help women increase breast feeding. But what we've noticed is that the groups themselves have branched out from just breast feeding and now include many other health interventions that they're working on with their communities. Now this is not outsiders going in telling them what they should do, but the women themselves develop their own activities and this has led to increases in their self-esteem and really changes the women themselves as well.

So what has been a common trend in all of these interventions. There's been a real sense of political will to get these changes in hospital practices. There were nationwide breast feeding campaigns that had the support of the President and Congress and other policymakers to focus on what to do to promote breast feeding. In relation to ORS, there was much international support in terms of both resources and in terms of real political mobilization and the same is true in terms of immunization. I think if we can see this in developing countries with much less resources than we have here and much worse conditions both social and economic conditions, then we can certainly take the experience that they've shown us and do the same thing here in the United States to really reduce infant mortality. Thank you.

Ms. GRAD. Thank you. Those are some extraordinary presentations and I sit here and I think we are struggling so hard with the domestic agenda to even put the concept of things like home visiting and a home-based health record even in people's minds. And here you look around the world and this is so much a part of the fabric. We have a few minutes for questions before we proceed to the next panel. I think this panel was very rich with ideas. I think they would love to hear from you. So questions or comments?

VOICE FROM AUDIENCE. Dr. Huffman. What has been the impetus for change in the countries you have visited?

Ms. HUFFMAN. I think its come from several levels. Some of it has been at the grass roots level. For example, health professionals that have read about breast feeding or who have been trained. There's a great example in the Philippines where a woman came and met with one of the professionals here in the States on breast feeding and went back and just decided to change her whole hospital. Some of this has been from just one hospital practitioner who has seen experiences in other countries.

Costa Rica has really led the way in breast feeding and health workers have gone from other parts of Central America to Costa Rica and have consequently initiated major changes. So it starts at that level.

Some nationwide surveys have had a major impact, showing a major decline in breast feeding and cost implications of those declines have led to policymakers becoming concerned. So you've had it at all different levels. Guatemala is a very good example because over the last 8 to 10 years they've developed a breast feeding commission and other countries have developed breast feeding commissions, but one of the differences in Guatemala is that they have funding. In Panama they have breast feeding commissions that basically fail because there is no funding behind it. UNICEF has provided funding to Guatemala to have real staff on there breast feeding commission. In the District of Columbia as well, there was no real money behind the commission and it's very difficult to get anything xeroxed much less anything done if there's no money. And that commission has members from administrators of health, administrators of agriculture, administrators of labor so that there can be coordination. As Tony Hall said before, the need for coordination is really important, but there has to be some meat behind it and that's been very successful there.

Ms. GRAD. I just want to ask, Dr. Aiello. Are you seeing increases of diarrhea disease in the Delta? Is that something that's happening?

Dr. AIELLO. Yes. We do see a lot of that and I want to point out that we were recently given a grant of money by Mead/Johnson through the International Children's Foundation. Through that we are able to sponsor a pediatric nurse and I'm looking forward to promoting not only ORS but a program in breast feeding. Breast feeding is practically unknown. I think five women in my 10 years that I know for certain have breast fed. They don't do it. It's culturally not acceptable. It's not promoted and I think that's one of the ways we can use this pediatric nurse that we were able to get money through this foundation. Mead/Johnson is one way we're going to use that.

VOICE FROM AUDIENCE. Dr. Aiello, can you speak about the relationship between malpractice suits, OB/GYN's and midwives?

Dr. AIELLO. Well, I think that the whole malpractice issue is just incredible. The obstetricians need backup. These are high-risk deliveries. I was trained as a family practitioner. I went to a family practice residency and the first year I tried delivering babies for a year and believe me it was a harrowing experience. Because you know, you do have teenage mothers without prenatal care. The smoking thing is a real problem and I'd just like to mention more on that. Just this weekend I came from Memphis on my way here and I was at a medical meeting, but they had a little Octoberfest celebration at this little area. Salem cigarettes were there with a truck giving cigarettes away. And there was a line up, all black, for cigarettes. I just think that this is atrocious. But back to physicians and midwives. The physicians are not supporting the midwives. They feel that there's too much high risk. I mean they have been sued so much that they're just really gun shy about the whole thing. It's unfortunate. We have a midwife training program in Jackson, MS, I think its unfortunate because years ago most of the babies were delivered by midwives and the women will tell you it was very successful. But I think its just the whole malpractice issue that's just got the doctors shy about it.

Ms. GRAD. Thank you. We're going to have to break this panel, but I think we're on the verge of some wonderful discoveries. So we will have lunch and break time built in so that you can talk to each other and our panelists.

Thank you Dr. Robinson, Dr. Aiello, and Dr. Huffman.

I'd like to call now Dr. Sandral Hullett, Ms. Minda Lazarov, and Dr. Naomi Baumslag. You can come forward.

Our second panel will address domestic and international community-based services to reduce infant mortality.

Our first panelist is Dr. Sandral Hullett. Dr. Hullett is currently the director of the West Alabama Health Services. Dr. Hullett oversees the administration of the Rural Alabama Pregnancy and Infant Health Program which is a home visiting program utilizing lay community workers to provide outreach education and social support to low-income families. Dr. Hullett has served as the president of the Green County Medical Society and chairperson of the Task Force for Teen Pregnancy. Dr. Hullett speaks frequently on rural infant health concerns. We are delighted to have her with us today to share her knowledge and experience especially as it relates to home visiting.

Our second panelist will be Minda Lazarov. Ms. Lazarov is the director of Pediatric Nutrition Surveillance and the Tennessee Breast Feeding Promotion Program. Among her many responsibilities. Ms. Lazarov oversees mother to mother support programs and the Tennessee WIC Breast Feeding Promotion Project. She also works with the Pediatric Nutrition Surveillance System for the Federal Center for Disease Control. Ms. Lazarov has been a WIC administrator and nutritionist and today she will discuss breast feeding promotion activities in this country and the relationship between breast feeding and nutrition in infants.

Last on this panel is Dr. Naomi Baumslag. Dr. Baumslag will give us an international perspective on community-based interventions to reduce infant mortality within minority and rural communities. Dr. Baumslag is from South Africa and has worked extensively to improve the health care of mothers, babies, and children. Dr. Baumslag is currently a clinical professor at the Georgetown School in Pediatrics and Community Medicine and Family Medicine. She is an outspoken champion of women's and children's health issues having consulted for many agencies including UNICEF. She has published extensively and is the current president of the Women's International Public Health Network.

I look forward to the panelists' discussion and would encourage you if you need to get some more coffee or food, we'll have a break after this panel, but you're welcome to get up as you will.

STATEMENT OF SANDRAL HULLETT, M.D., DIRECTOR, HEALTH SERVICES, WEST ALABAMA HEALTH SERVICES, INC.

Dr. HULLETT. I'd like to thank you for being invited to speak today to the Select Committee on Hunger. This is a privilege. I'm working in West Alabama which is a very poor part of the State of Alabama. I have a few slides I'll show shortly. I'm going to go over briefly what the program is, why we started the program, what we intend to do, some of the things we learned from the program, and show you a few slides and let you see the area to get the impact of the problem, and then to give a few suggestions on how we think home visiting can affect and help infant mortality.

West Alabama Health Services is situated in what is called the Black Belt. The black belt is called so because of the rich band of black soil that passes through the lower part of this State. It was once the cotton producing king of the South and cotton is no longer being produced in the South; even though I think it's going to start back again. It's now a very profitable product. But during this particular time over the past 50 years or more, cotton has not been produced. We have a large number of poor people, a large number of old people, a large number of young people. I came to the area in 1979 as the National Health Service Corps person, repaying an obligation to the Government. I am a family practitioner. Infant mortality ran in this area as high as 36 per 1,000 live births. It was highest in the State of Alabama, one of the highest in the Nation and, in fact, we were No. 1, second to the District of Columbia. In the United States we are No. 3, with an infant mortality rate of 13.6 per 1,000 live births.

The problem was very disappointing to see young mothers coming into the clinic with babies. There was one particular incident which really made me get involved with this particular project. I had a young lady that delivered a baby. I still do obstetrics and this particular young lady's baby only weighed 5 pounds. We have the mothers bring the babies back in 2 weeks and the baby came back weighing 3½ pounds. So we asked, my goodness what happened? She said, well, the baby was asleep so I only fed it when it would cry. So she was feeding the baby up to one or two times a day. She had very little support or any one showing her what to do or how to do it. So I was discussing this with a friend of mine who was at the University of Alabama. We said there had to be something we could do. We heard about the Ford Foundation.

We wrote a grant to use lay women in the community, something that has already been spoken about, using what we called natural helpers. These were women who were identified in the area who were people we elected to use, people that did not necessarily have a college degree, did not even finish high school. All they had to be able to do is read and write and to drive a car which is very important. So we started this program using the lay women even though we understood a lot of the research had been shown that nurses were maybe ideal for this particular process. Then, health departments in our area did have some women at outreach programs and again used nurses. But let me explain why we used lay women. It was not because this is a natural process for women to help other women, but because in our area there are presently very few health professionals. There are nurses right now, about 99 nurses in a three-county area, giving us a ratio of about 900 people to every one nurse. There are 99 primary care physicians giving us a ratio of 476 to 1; 25 dentists which gives us a ratio of 8,690 to 1 and only three registered nutritionists which gives us a ratio of 28,965 to 1. So we use what we have available to us; people who were there, who were willing to work. We started originally with a volunteer program which did not work because it cost our women to volunteer. So we ended up with a minimum wage program, using part-time women and have made an impact on our area in a couple of ways.

We had an impact on the ratio and we're dealing with small numbers because the counties that we're talking about have a total of about 12,000 people, one 17,000, one 18,000, but the very large area is wide, ranging from 20 persons per 100 square mile; is very sparsely populated. That's why a car is very important. But we've shown during a 5-year period of time of working with this particular program that we dropped the counties with the highest infant mortality rate from a ratio of 36 per 1,000 live births to 5.9 per 1,000 per live births. Whether it was the home visiting program alone, we can not say, because we've made numerous interventions, but this is one of the major ones. The program was successful in the fact that it insisted on breaking down the barriers that kept mothers from using the system. That is, just going out and telling mothers how to get in and how to use the system. It increased the total number of prenatal visits. I have averaged 3 to 4 to 10 to 15. The mothers nutritional status improved. We had a control group. We had women who were home visited, who were part of the women who came to our center versus women who did get prenatal care but at physicians offices, yet did not have home visitation and did not have an educational program. We showed that the women that were home visited did have improved nutritional status, had fewer low-birth-weight babies. The overall infant mortality rate for the whole community improved and we think that was part of some contamination because everybody could see what somebody else was doing.

The mothers in the home visited groups were motivated to return to school and seek employment and the home visitors themselves upgraded their skills. Many of them who came on as volunteer or part-time went on to become licenced nurses aides, LPN's, some got jobs at front desks, people in offices for different health professionals, and overall upgraded their skills. The kids all showed much higher immunization status. Again, this is from the direct intervention from the home visitation. There were a couple of problems with the program and it did not, if you're looking at hard core signs, we did not see any change in the repeat pregnancies in this group. Some people feel its because the home visiting made the whole experience of having a baby such a great experience that people decided, hey, maybe I'll try it again. So we didn't do as well in the beginning as we would like in family planning. We're still working on that.

There was no great statistical change overall in the birth weight of the children who were controlled and noncontrolled but the difference here is that the women that were home visited did have larger babies. The overall community birth weight seemed to increase as a whole and we feel this is because more people started going to doctors. There is a lot to be said about the program. I'm trying to narrow it down really quick so you can get other people involved and have more of a chance for questions and answers.

Home visiting overall has shown not only in this program, but in other programs as well, that you can get help with your babies, you can reduce abuse, and neglect in children and if you have that stimulation of helping the household that you can get better intellectual development in the babies alone. So it does have benefits. We feel in our area it's a cost-effective mechanism just from the fact that we did not have resources, professional resources that were available in other communities. We used a resource that did not cost us a great deal of money to impact upon our total health care.

When I present this information some people get into arguments with me. They say nurses make better home visitors. I am not arguing that nurses don't make better home visitors. I'm saying if you don't have nurses, use what you have. I do think that you can make an impact with lay visitors. People have been using them in other countries and this is a lesson I think that we can learn from other countries that have used them and used them very effectively. We saw briefly this morning that it is a resource that can be used. I would like to make a few quick recommendations. I would suggest that Congress make a more cost effective study of home visiting and Federal funding should include home visiting. And again, it doesn't make any difference whether they're professionals or parafessionals, but reimburse for the services that they give.

Now here in the community health center we have, we had to go when the Ford Foundation ended the funding which it did 3 years ago. We had a drop of a staff from ten women to two to serve the same number of women that ten were doing. So we had to alter the program. Not make it a program that was open and available to any woman who wished, but change it to only women who were targeted. We had to target high-risk women; women who had problems or who had potential problems. So we targeted to work with the limited resources that we had. After showing the information that we had and this is another important issue, to make audiences like this believe and people who issue the money believe you have to show that something you have done worked. You have to have the numbers. We don't like to do it, we don't like to do everything all objectively and say how great you are. You know people won't believe one or two annotated stories. You've got to show what you're doing. And so we could show what we were doing and in our recent perinatal grant we have been awarded seven women as a part of our permanent program. Therefore, we no longer are trying to look for more money every grant period to fund something that we know works.

I'm asking that in special programs such as the medicaid services under the Maternal and Child Health block grant that home visiting be reimbursed because it can be a very valuable service. There was a book put out here, now we were not favorably spoken of in this book. I tell you that, when you see it, but this is "Home Visiting: A Promising Early Intervention Strategy for At-Risk Families." I think if you haven't seen it, you should read it. It's good. It goes over all of the pluses and minuses of home visiting programs. It's done by the U.S. General Accounting Office. It's a report to the chairman of the Subcommittee of Labor and Health and Human Services, Education and related agencies, Committee on Appropriations in the U.S. Senate. We were not favorably spoken of because they considered what our problems were and how we had to revamp our program to make it work. So there are problems and sometimes you start off and anyone that has done research, you start something and it doesn't work, you have to change it around and make it work. And that's what we did.

Let me show you a few slides and say a little bit about the community where I work. The area is called West Alabama and that's a picture in Alabama, the agency in which I work and where I'm health services director and my executive director is Mr. James Coleman. I've worked there now for 12 years. It's my original start as a National Health Service Corp person. This is just a description of the different problems of the women that we worked with. They were young, unmarried, 81 percent were single, 68 percent living with parents and grandparents, 19 percent of this group were head of their own household, 37 percent were teenagers. We were originally targeted for teenagers but we didn't have enough, so we had to end up adding young women who were under 20 years old, who had at least three children, and we found that they didn't know more than a teenager. We found 61 percent had their first child; 77 percent were high school graduates and this was a little higher than we had anticipated, employed, 18 percent; and 55 percent began prenatal care in the first trimester. We feel this had a great deal to do with our home visiting. There were 47 percent with no telephone, 50 percent had no family car, 65 percent had no central heating, 72 percent had no air conditioning, and that's a lot in Alabama if you don't have air conditioning, and 83 percent had unplanned pregnancies.

This is the area. This is the home lodge area. As I said before, we are very rural; 20 persons per 100 square mile of farm country. No big industries. Cattle are now No. 1. Catfish farming is No. 2, that's a catfish farm. It's the second largest industry. A farm is about 5 acres. Again, the land is very rich. Nothing is being done with it right now. These are the children that we're dealing with. This is in Alabama right today. This is not a third-world country. Kids are poor and their health is not at all what we would like. This is housing still in Alabama today. Not in a third-world country. A lot of families select to live in a house like this because they don't have to pay rent. They don't have the money and they can stay in a house like that with no rent. If they move to a project housing they have to pay an electric bill, water bill, and they have to pay rent. We still have people that live this way in Alabama.

These houses are right in looking distance from each other. You see the tractor on the side. Farming is no longer important. This is a picture of some of our mothers with their babies in one of our groups from the home visiting. I picked this one in particular because we have WIC Programs, and food stamps, but this is the kind of food that our patients eat; high salt content, low nutritional value, and we're working diligently with the home visiting program and other programs in the community to show people how to eat better. Not to change from ethnic food, but to eat better. Maternity programs are one of our largest components of the center and we see a lot of mothers and babies right now. This is one of our home visiting groups. We have the younger women and the older women working together. And they have meetings where they talk about their findings and how they relate to the community. This is one of the meetings, two people in the group. We have a very large transportation program which is probably a luxury to our area compared to some rural communities which does enable us to get our patients to and from keeping appointments. And we don't have a high no-show rate as I heard before because of this program. But transportation is a major factor in rural health of any kind.

We talked about all the different problems of unemployment, poverty, family violence, divorce, all of these issues compound the issues that we're talking about of infant mortality. Which one is the major problem? We don't know. But we feel that all of them are a problem. These children are our future. These are the ones that we're trying to keep those happy smiles past year 1, so that they can become an important part of our community. This is what we want not to happen. This type of child is the one who originally got me interested in home visiting in our area. This is a picture of a child from our community, not a third-world country. This is what we want to prevent and we feel home visiting can assist in doing this and should be considered as a alternative in delivering health care. Thank you.

STATEMENT OF MINDA LAZAROV, DIRECTOR, BREAST FEEDING PROMOTION AND SUPPORT AND PEDIATRIC SURVEILLANCE PROGRAMS, TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

Ms. **LAZAROV**. Hello, I'm Minda Lazarov and we're running a little bit behind schedule so I'm going to take a few less minutes. I'm really encouraged to hear all this discussion about breast feeding. Particularly just seeing it on the agenda today I think indicates that there are some changes going on in the United States that should hopefully allow us to use this method of public health education and treatment if you will, for one of our major public health problems of infant morbidity and mortality.

In the United States the situation is a little different than some of us expect when we first hear about the problems of breast feeding here in the country. The rates of breast feeding among low-income women in the United States are half than that of middle- and upper-income women. And that's the reverse of what some people expect. If you look at particular population groups within low-income women in general, particularly within the WIC Program, you see extremely low rates of breast feeding. As you've heard earlier, there are some groups where there are no women at all breast feeding. If you look at Southern rural black women and urban too, uneducated, young, very rarely do these women breast feed. Southeast Asian and Hispanic women have high rates of breast feeding when they first come to this country. It seems like some folks develop some of our worst habits first and the rates quickly drop

So we do have a big problem in this country and what I want to show you here is a high-tech visual aid. It's really for two reasons. One, our project has been so successful in Tennessee that we have recently expanded to four other areas and have hired four new coordinators to implement breast feeding promotion programs across Tennessee and they've used all my slides so here's what I did in a workshop in Atlanta a few months ago. I asked a few groups of physicians, nurses, and nutritionists what are the advantages not only to the individual and to the family, but to the society as a whole, of breast feeding over bottle feeding. These folks had been pretty well indoctrinated as to the recent evidence regarding breast feeding promotion and its potential for the health of infants in the United States. So as you can see right here there are quite a few reasons. I show you this because when they went to list the reasons that show the benefits as you can see, there's quite a difference in the list for the benefits for formula versus the benefits of breast feeding.

I think there are numerous reasons why in the United States we as health professionals and as policymakers should begin to realize that breast feeding really can make a difference. Specifically, one area I would like to focus on is in diarrhea. You heard Sandy Huffman mention some of this. I'm just going to briefly run through it, but CDC did estimate in 1988 that there were 200,000 infants who were hospitalized for diarrhea. Now that may be from gastroendoritis, over dilution of formula, even formula intolerance or allergies. All of these causes of diarrhea can be prevented with breast feeding. Over dilution of formula is a problem that we really associate only with third-world countries, yet it is going on in the United States. There was a study done in Harlem in 1987 that showed that over 800,000 families who were surveyed, 50 percent of the families had over diluted formula because there wasn't enough there. In the WIC Program we do provide formula, but there's a limit on that and we'll go into that a little bit later. Also there are studies.

There's a lot of mixed information available on whether breast feeding is protective for various infections in developed countries. Over-developed is how I like to refer to it. But there are quite a few studies that show that even in developing countries, gastroendoritis is one area where clearly breast feeding still has a protective effect. In the British Medical Journal in Scotland there was a study that showed that babies who were breast fed for at least 13 weeks were three times less likely to have the gastrointestinal infection. The Journal of the American Medical Association, some of you are probably familiar with the study of the national infant mortality data that was reported there and showed that an average of 500 deaths a year occurred from diarrhea and this was looking at data from 1973 to 1983. They found that in these children, infants 28 days of age up to 4 years of age, most of these deaths occurred among the infants, the younger infants. Among Southern black babies they were four times more likely to die of diarrhea. In some Southern States in Georgia and Mississippi the infants were ten times more likely to die. So once again, this is something that could be prevented with breast feeding.

Now the authors concluded in this study talk about oral rehydration therapy, but there was no mention of breast feeding as a preventive measure. Formula intolerance, allergy, these are all things that are relatively rare in breast-fed babies. Diarrhea in general, is uncommon in breast-fed babies. So on that list you could see all of that, but I don't have time to address it. It does make a difference in this country, and it is an area worth us putting a little energy into. We have seen in Tennessee dramatic changes in the rates of breast feeding. Even among those populations of folks who we think are less likely to breast feed or would never breast feed. What we've seen in Tennessee through a breast feeding promotion program that was funded through the U.S. Department of Health and Human Services are that the rates of breast feeding could be turned around and turned around in a relatively short period of time. We implemented a program that involved both trained peers, lay counselors, if you will, and health care professionals. A lot of effort went on both in the clinic, the health department with our Maternal and Child Health and WIC Programs and also in the community and also involved the hospital and a media campaign. So it was a comprehensive approach to breast feeding promotion.

The trained counselors I think were the greatest aspect of this program. And that's what I want to briefly cover here because I think it has a lot of potential for these areas as you've heard where there aren't the care professionals available to do this. We assume health care professionals have to do it all, but I think peers are an excellent way to improve health among that segment of the population that doesn't have access to health care. What we've seen is by training these peers about how to counsel, and particularly how to address women's concerns about breast feeding in the prenatal period you are able to establish a greater commitment to breast feeding, and a commitment strong enough that they'll follow through with all the obstacles that they will encounter in the health care system.

What we've done with these trained peers is we've taught them how to address a women's concerns; when she comes in and talks about how she has to return to school or return to work or she just doesn't want to be tied down or just doesn't feel comfortable with the lack of freedom that she is going to have if she breast feeds. Our peer counselors are trained to say, "You know, that baby has been nurtured and massaged for 9 months and when its born it still needs to be nurtured, helped, regardless of whether its bottle fed or breast fed," and then she goes on to talk to her about how breast feeding helps her meet her needs as a mother. We found that these women have the same aspirations for motherhood as middle- and upper-income women and we include that into our counselling and the prenatal period discussion of how breast feeding helps her nurture and mother her child.

We teach these trained peer counselors how to address concerns about breast feeding in public. For instance, when they say that they saw a woman pull out her breast and they just don't think they can do that. We teach them how they can nurse discreetly, we teach them how they can both breast feed and bottle feed if they want. We teach them when they hear about restrictions associated with breast feeding, like you can't breast feed if you don't eat right. You have to drink 10 glasses of water a day, you have to basically be a saint. You can't do much of anything if you breast feed. We help the mother understand that breast feeding is something that could be adapted to any lifestyle with a couple of basic counter-indications. But in most situations we've seen that these women can do it. So the trained peer counselors are spending their time in the prenatal period counseling these women.

In the post partum period, they go into the homes and to the hospitals and provide the support when needed to get the mother started successfully with breast feeding. We bring them together in discussion groups both in the prenatal and post partum period. We give them free diapers, cloth or disposable, if they will come to these discussion groups and hear other women in the community talk about breast feeding, and how they deal with these concerns. If they bring somebody with them, a friend, a family member, a mother, a husband then they get the free diapers. So we encourage that significant other or other people in the community to come to these discussion groups and they're very relaxed groups. We found that this is a very effective element of these promotion projects. Another thing that we've done is provided these little T-shirts, "I Eat at Moms." They get this T-shirt when they call us within 24 hours after delivery, or have somebody from the family call. Then at 2 weeks and 4 weeks there are various other incentives we provide throughout. For example, nursing bras, nursing pads, breast pumps. So there's a lot of ways that we've incorporated these peers as well as health professionals into our program.

We've done a lot of networking in the communities and in the hospitals. The Tennessee Hospital Association and the Tennessee Department of Health and Environment have worked together to send out joint letters to all hospitals, pediatricians, family practitioners, and obstetricians in the community across the State to discuss the things that could go on in hospitals as well as in their own practices to support these women, letting them understand the problems these women have to deal with. Also with WIC we feel there are a number of things that could be done in WIC agencies. Some of you may be familiar with the legislation that was recently passed that hopefully will establish more aggressive support for breast feeding in all of our WIC clinics and all of our health Departments for that matter. WIC is a unique situation because there's really no other area of public health where we provide the competing product. In other words, where they're saying that breast feeding is what would be best for your baby on the other hand we're giving out the formula. It's a good product, but unfortunately it sends a very mixed message. So there are many things that WIC could do to balance that message. It's as if we're saying you need to use low-fat milk, and you discuss ways to use low-fat milk products, but all we are providing is whole milk. So we're continually in this kind of awkward situation in WIC clinics and there are a number of things that can be done to help balance this.

We've implemented a number of policies in our clinics that help establish a very clear statement, that this WIC clinic and this health department or Maternal and Child Health Program are supportive of breast feeding and that we mean this. And one last thing I'll mention, this project has been supplemented with funds from the Center to Prevent Childhood Malnutrition. As Sandy mentioned, its a mother-to-mother support group and this project sprung from our interest in the improved self-esteem that we saw among many of these mothers. This is not something that's documented in the literature as a benefit of breast feeding when we talk about any psychological benefits in general in relation to the infant, but what we saw this time-after-time in our SPRANS project as well as other SPRANS projects across the country saw the same thing.

As these mothers change they really become more vocal. You can see their confidence building as they go through this breast feeding experience and its really an indication of a couple of things. One is whenever you meet any challenge against the odds in these communities where there's no one breast feeding, and they are breast feeding and they are doing it successfully, then they're seen as a role model. They feel good about themselves. They're also all of a sudden looked to as a source of advice when they have never really been asked their advice on too many things. It's a very special experience and most of these women don't have many special experiences in their lives. So for all these reasons you really see a lot of changes going on with these women. You see improved parenting skills, you see they're much more receptive to the nutritional education, family planning information that they're given, a lot of the services that they're given through the health department. They just seem to take more responsibility for the health of themselves and of the health of their families after going through this experience. I don't know that in some ways if it is just the breast feeding as it is the overall experience of being linked with a lot of other mothers and health professionals in an area that seems to make a difference in their lives.

So very quickly let me give the results of our projects to show that it does make a difference. We started out in our first site that was primarily black, very low-income, in rural West Tennessee, outside of Memphis with a 16 percent rate of breast feeding at hospital discharge. It was increased to 35 to 40 percent within a year and a half. We've now seen higher rates in our other clinics around West Tennessee. We're seeing 50 to 80 percent rates of breast feeding. The rate of breast feeding at 6 weeks post partum has increased five-fold, its continued to go up. We've seen lots of women in the waiting room that are breast feeding which is certainly a change for most WIC clinics. In the past you've seen all bottle-fed babies and now we see many women in these clinics breast feeding and they are able to sit there and tell other mothers, mothers that are pregnant, about their breast feeding experiences and that's a very powerful message. We've also surprisingly enough, seen many of these women, the majority, choose to exclusively breast feed which was surprising to us. These were women that we as health professionals made the assumption that they didn't want to breast feed. In fact, we may not have even spent any time discussing breast feeding because we assumed they didn't. Yet these women regardless of whether they're young, regardless if whether they're working, regardless if whether they had four or five children at home, they chose to breast feed and to breast feed exclusively. We had a 60 percent rate of exclusively breast feeding at 2 weeks and almost 43 percent at 6 weeks. So it was really surprising. So I think that's all, we've run out of time here. If you have any questions.

Voice From Audience. Do you have any literature to give out on your project?

Ms. **Lazarov.** I didn't bring any information with me, but I'll leave this sheet up here. If you'd like to put your name and address on it, I'll send you some more information about our project. Thank you. I appreciate the opportunity to share this with you.

STATEMENT OF NAOMI BAUMSLAG, M.D., PRESIDENT, WOMEN'S INTERNATIONAL PUBLIC HEALTH NETWORK

Dr. **Baumslag.** I'm very pleased to be here this morning to talk about programs of preventive care that are applicable on a large scale to both developing and developed countries. The poor in all countries are the same. As we've heard from speaker after speaker, their resources are extremely limited and transportation, sanitation, food and employment are all part of the problem. I don't think it's single interventions that we're looking for. It's a combination of interventions and it is the mode, it's how we apply these or how we work with others to get this going. But it's important what we do. So this morning in the short time I have available, I have written up a talk. It covers the intricacy, the historical program and some of the other programs they have in other countries that may give you ideas of things to do. I also have some actual cards that have been used in different countries that I'll leave here on the table and you can go through them and a popular book which has been used in Brazil for spreading the word on oral rehydration.

People are very innovative. They use whatever resources they have to try and get the word through. I'm going to try and put a human face on what we're talking about with my slides. So if you will bare with me I'll try and go through them quickly and answer questions afterwards.

My main focus is on women. Historically, programs have always dealt with the child and have failed to recognize the importance of the woman. We look at infant mortality and low-birth weight but we don't recognize the fact low-birth weight is frequently associated with poor maternal nutrition and poor maternal health. Something that is never recognized all over the world. So here you see this pitiful mother and the baby and usually the health worker is screaming that the mother is not feeding the baby properly, but look at the mother.

As a result of the conference in Mongolia in 1978, four major interventions were identified, covered by the acronym GOBI which stands for growth monitoring, oral rehydration, breast feeding and immunization. But this didn't stop there. Later, it became clear that there were several other factors that could help lower infant mortality. These included female literacy, which is highly associated with lower infant mortality, feeding of infants and supplemental feeding of mothers, and third, family spacing. Now this slide shows you one of the first interventions I'm talking about which is growth monitoring and depends on the use of a growth chart. Very innovative growth charts have been made that are distributed to mothers in many programs in developing countries, but somehow or other we can't get them to mothers in this country.

In a leading medical school, I'm not going to mention the name, I had the occasion to be called in to have a look at 15 children who had failed to thrive. They had $25,000 worth of endocrinology works done on them, yet there was no growth record available from birth. I think that's outrageous. This growth chart which could have messages about health, messages about oral rehydration, messages on breast feeding, whatever is relevant. You also can document the child's weight, height if necessary, immunizations, and illnesses. It's so important because you can miss growth failure just by looking at kids in the clinic if you don't try to refer to, a growth chart. This slide shows you the growth chart and how its being used to show episodes of diarrhea and its impact on growth.

Throughout the world these are traditional birth attendants. In South Africa, we've been training birth attendants, and lay women to spread the message to increase the health coverage and it doesn't matter whether its breast feeding, or oral rehydration, or whatever. These women are effective agents of change in the community. Here are some women who are out in the field in the Africa Aid Program and making a difference by providing supplemental food. They are finding cases and that's very important because the people who don't come to the clinic are most often the people who live in the outer community. These outreach workers can collect information and bring it in. We need that collection of information from the community which goes back to the health center and then higher up and eventually comes back to the community. That's what these women can do and that's absolutely critical to any program.

This slide shows the second intervention that I'm going to mention. I want to say that its become recognized that we do need growth charts for mothers and several organizations are now working on it. There's no money for this kind of thing, but there is money for a cat scan, or fetal monitoring. I can not understand the rationale for this.

Anyway, we now come back to the second intervention which is ORT, or ORS, oral rehydration therapy or solution. As you've heard from the speakers, millions of lives have been saved by the prevention of dehydration early, not by prevention of diarrhea, which can only be prevented by breast feeding, and by exclusive breast feeding at that, and also by improved sanitation.

Dehydration due to severe diarrheal disease is a major killer of children under 5 years of age. Until the late 1960's drugs and intravenous fluids were the accepted treatment for diarrheal dehydration and required special facilities, highly trained staff and enormous quantities of fluid. The discovery that glucose dramatically enhances the absorption of water and salt, even in a damaged bowel, has revolutionized the technology needed for rehydration. ORT has proven so safe and effective that it can be given in the home by nearly anyone with minimal training. Once the routine use of ORT is established, mortality from diarrheal dehydration can be virtually eliminated. Severe cases still require I.V. or intragastric fluid but even in these cases ORT can be lifesaving when it is used as an early stopgap measure, especially in underserved areas. Where the problem is widespread rehydration centres have been established.

Mothers and child caretakers are taught to give oral rehydration if a child has three or more watery stools per day. As a rough measure, for each stool passed, two cups of ORT should be given. Exclusive breast feeding is preventive against diarrhea. Infants who develop diarrhea and are being breast fed should continue to be breast fed.

In young patients with severe diarrhea, cup and spoon feeding in small quantities is recommended to reduce the risk of vomiting. Mothers should continue breast feeding and children should be given as much food as can be tolerated in addition to ORS. Oral rehydration solution can be prepared commercially or at home. WHO recommends a rehydration formula consisting of sodium chloride, 3.5gms; sodium bicarbonate, 2.5gms; potassium chloride, 1.5gms and glucose 20gms per litre of water. For home preparation of one litre of ORS add 8 teaspoons of sugar, and one teaspoon of salt to 5 cups of water. Prepackaged mixes are available at low cost for use in homes and health centres. Where there are no packets of ORS formula available innovative methods of measuring salt sugar and water for home mixes are available. There is the pinch and scoop method making use of a three finger pinch of salt and a scoop of sugar to barely cover the palm of the hand, per one drinking glass of water. A special plastic spoon is also available in some programs with one end for sugar and the other for salt. Problems of hypernatramemia, although rare, must be guarded against. Simple technology and trained health aides, or volunteers, and mothers provide an opportunity to lower mortality on a wide scale.

Recently scientists became aware of the fact that mothers use food based remedies such as rice water, carrot, bean, or chicken soup for diarrhea. Studies show that cereal based ORT not only is effective against dehydration but cuts the number of diarrheal stools. Diarrheal control programs are widespread and take many forms.

In markets, work sites along roadsides in Lusaka, Zambia, popular theatre groups promote ORT labelled *Madzi-a-Mayo,* water of life; ORT is not the solution to infant diarrhea; it is a remedy. For prevention, programs have been developed to promote exclusive breast feeding, clean sources of water, adequate sanitation, and personal hygiene education.

Currently 110 countries have diarrheal disease control programs. Honduras and Egypt have used social marketing in addition to training health workers, doctors, and mothers. They have been very successful in lowering infant mortality among Egyptian under-fives. Diarrheal disease has declined by more than 50 percent since 1983. In Lesotho the number of diarrhea cases treated in six hospitals declined by one-third in 1 year, 1987–88.

Efforts are centered around reaching the care givers on the frontline—usually mothers, and providing them with information and means of action. Focus group discussions, not health lectures, have proven effective. Health workers training has been aimed at providing consistent health messages and improving the quality of care.

Currently various projects are assessing oral rehydration based on foods such as rice, corn, and millet with salt. The results are promising, especially as the cost is low, these foods reduce the number of stools and this is important to mothers. At a meeting organized by the International Child Health Foundation in Karachi in 1989, evidence was presented showing that food based solutions reduced the volume and duration of diarrhea by 25 to 50 percent. The proponents of the ORT will move to this line of thinking as the current costs of production for ORT formula and making it available to the large number of the poorest of the poor in developing countries is impractical.

Diarrhea and infection are interrelated and malnutrition is part of this vicious cycle. Integration of programs is important to avoid lost opportunities.

I just want to mention a bit about immunization. It is a global policy that vaccinations be available to eligible infants and children and women of childbearing age at every contact they have with the health system. Failure to immunize a child is considered a loss. Surveys have been conducted for ways to increase coverage. In Honduras it was found that 45 percent of clinic visits failed to utilize vaccinations. Despite the fact diarrhea and infections are no longer contraindications to vaccinations they were withheld. In Pakistan, for instance, infants with coughs or colds or malnourished have been denied "shot."

A successful program that illustrates ways of increasing coverage is the Rotary Club program in Nigeria and India. Social mobilization is key to the Polioplus Program which these two countries and 88 other developing countries have put into practice. In each country an army of volunteers, mostly rotarians, is recruited and trained in immunization tasks, such as baby tracking, health education, and record keeping. The volunteers work with political and health leaders to organize and conduct immunization drives. The network is solidly built with committees and directors at state and national levels. The volunteers are trained in community level workshops. Sustainability of volunteers is a problem, but ways to motivate these workers are being devised.

Some countries have raised immunization coverage through national campaigns, but national campaigns are not enough. In addition to national campaigns, Nigeria established 4,000 new health units to sustain the program and as a result increased the percentage of fully immunized children, 12 to 20 months, within 6 months from 20 to 38 percent. National leader's support has also been invoked. A ministry of education program in Senegal links newborns with middleschool children who follow their "adopted babies" through the vaccination schedule. This hopefully will produce not only vaccinated infants but a generation of school children aware of the importance of immunization.

Many countries have significantly raised coverage rates through political, community, and grassroots support. By not paying close attention to social and qualitative factors and the logistics of health care, opportunities are missed. Integrating the services for the family and providing both curative and preventive services is essential. I think we have a lot of challenges and we have a lot of good examples and if we had a little bit of funding we could implement some of these programs in this country. Thank you.

Ms. GRAD. These are amazing presentations and I'm sure we're all hungry for questions as well as our break. I know we're running a few minutes behind. Do you want to take a few minutes for questions? Then we'll have time during the lunch period also for questions. Lets just take a few moments for any of our speakers on this panel any questions or comments?

VOICE FROM AUDIENCE. How is your program funded, Dr. Hullett?

Dr. HULLETT. We are funded under the Bureau of Primary Health Care and I work for a community health center. There is some additional perinatal money and this is funded under a perinatal grant.

VOICE FROM AUDIENCE. Can you tell us a little about the training of the women?

Dr. HULLETT. These programs work best with very good supervision. You must have clear defined goals and guidelines and supervision. The women are supervised by a combination of both a social worker and a nurse. The women go through 2 weeks of intensive direct training, followed with weekly in-services training.

Voice From Audience. What prompted you to begin this home visiting project?

Dr. Hullett. I want you to understand that we did this primarily because there was a need. Routinely we would use health professionals. We didn't have them. But even if we did have them we probably would use other support. You have to get into people's households. A nurse or even a doctor or social worker often have difficulty with getting information. Social workers are shunned in our area. Many women think that maybe someone has come to spy on them. So one of the most important aspects of the program is to gain the people's confidence first, then they may be willing to work with you.

Ms. Grad. We have time for one more question and then we'll have our break. Just to make sure you know, there's an order form in your packet to order the GAO report on home visiting and of course the commission has its report on home visiting. You're welcome to drop your card and get yours. Lets take a quick 10-minute break and reconvene at just before 11:30 and we'll continue with our third panel.

RECESS

Ms. Grad. We've talked a lot about the strategies in rural areas, and some of the international comparisons, now we're going to focus on urban strategies. Deborah Keith is a staff midwife at Mary's Center here in the district. Prior to coming to Mary's Center Ms. Keith was a nurse midwife in Central and South America. Mary's Center is a nonprofit prenatal and pediatric clinic serving low-income immigrants in the District of Columbia.

Most of the patients are latino ages 18 to 25 from El Salvador and Mexico. The center offers a variety of health and related services ranging from on-site WIC registration, prenatal and pediatric health services, and health education.

Our second panelist is Phyllis Johnson. Ms. Johnson is the project director for the Detroit-Wayne County Infant Health Promotion Coalition. The coalition was formed in 1983 to address Detroit's and Wayne County's high incidence of infant mortality. The coalition consists of 63 agencies which address everything from services and access and to the education of health professionals. Ms. Johnson is a member of several committees and professional organizations and is currently a fellow with the Kellogg Foundation. I should say for both of our speakers first about Phyllis. I am also a Kellogg fellow so this is a very unique brother/sisterhood, so maybe she'll get to talk a little bit about her international fellowship. It's a very exciting program. As far as Mary's Center, I often dream about finding the ideal spot where health care can be served to mother and children. One day I walked through Adams Morgan and saw Mary's Center; I thought I had died and gone to heaven. I thought we can do it, it can happen. All those things I keep yapping about home visiting, user friendly services, one stop shopping outreach education, it all happens at Mary's Center. It's a dream come true in a very high-risk area so I'm particularly thrilled that Mary's Center can talk to you today and hopefully give you inspiration on how it can be done in other areas. So lets get started.

STATEMENT OF DEBORAH KEITH, CERTIFIED NURSE MIDWIFE, MARY'S CENTER, WASHINGTON, DC

Ms. KEITH. Good morning. Thank you Rae for those kind words. We just celebrated our second year anniversary last week. We're happy to announce that things are going well. What I'd like to do is to start by giving you a profile on the clients we serve at Mary's Center and then give a little bit of detail about our prenatal program as well as the interpartum, post partum and pediatric components of our clinic. Most of our clients, as Rae mentioned are from Central and South America. The majority of the women are Salvadorian. The majority of them are young, 25 percent of our clients are teenagers. Most have been in the United States for 3 years or less. They're undocumented, uninsured and the majority have less than a 9th grade education. Most of them do not speak any English. Few are married, 60 to 70 percent live with a partner. They usually are unemployed and economically dependent on the wages of their partners or family members who usually do not earn substantial wages in jobs such as construction, restaurant work, and maintenance. They live in over crowded housing. They come from rural areas in their countries and usually have left behind family members.

Most of our women have left behind children and that particularly depresses the women and so they are here in this country with minimal family support. Most do not smoke, drink alcohol, or use drugs. They come from a tradition of strong dietary habit so that changes somewhat in this country depending on how long they've been here. In general, they've viewed pregnancy and childbirth as a healthy normal event in their life. They're generally conscientious, complying with the prenatal regimen once we get them in our care.

Now about our prenatal program.

Our bilingual staff consists of two nurses, four nurse midwives, one social worker, one social worker assistant, and one health educator. Nearly half of us are Latino. Our volunteer medical director is available for telephone consultation only and a weekly part-time review. Initially, each client is screened by a social worker. An attempt is made to try to get those pregnant women who would not otherwise have access to the health care system and are traditionally at risk or receiving little or no prenatal care. Economic resources as well as medical factors are considered and eligibility is established. In other words, as nurse midwives without direct collaboration with physicians, we have a protocol to follow. Some women are usually risked out of our practice, such as chronic hypertension, and other underlying medical conditions such as diabetes or kidney problems. Also, women who come to us wanting to get enrolled in the clinic may have insurance. Usually we refer those women, 100 percent actually. We refer them to other health care practices. We try to keep our spaces, which are limited to women who don't have economic resources.

On the first contact call we see women within 2 weeks by the social worker and for her first nurse midwife visit. Clients are given individual appointments in order to allow sufficient time and support and instruction at each visit. In an average month we accept 20 new prenatal patients, five of whom will be teenagers. We average seven new and returning prenatal visits each month. Clients are treated as responsible citizens and expected to contribute to the cost of their care. The prenatal packages range from $441 to $1,050, and that depends on family income. We have a sliding scale. It includes all their clinic visits, prenatal and post partum labs, home visitations, and all the care that we give to the mother during her stay at Columbia Hospital for Women, which is where we deliver, and following her postpartum in the hospital. Husbands and partners and family members are considered as part of the health care team. Every effort is made to involve them in the process and we usually get very good participation.

During visits and also at the birth we usually have almost every woman have a partner or the use of a significant other which is different from my experience in Central America or South America where often men are not included in the birthing experience. Traditionally it's a woman's event, but the men who do experience it find it very exciting. At Mary's Center we have a bilingual health educator who gives on-site classes during clinic hours on nutrition, preparation for the bath, breast feeding, STD, spouse abuse, child abuse, et cetera. So when patients come in for appointments if they need to wait for the nurse midwife or to have their blood drawn or see a social worker, they usually have classes going on the whole time. Often, even after they visit with one of the midwives some elect to stay to participate in some of the classes. She also offers an evening class once a month for childbirth preparation so that we can include spouses, partners, or significant others who might not otherwise be able to attend normal clinic hours during the day. We get a very good response from the evening classes. She also offers a once a month get together. The women come once a month in groups and we truck down to the hospital so we can show them where they're going to give birth, what the environment is going to be like, and talk to them about it. Many women are coming from a history of having their babies at home.

The nurse midwife also does outreach with several community agencies as well as junior and senior high schools. As I mentioned, at our clinic the nurse midwives take 24-hour calls for consultation and emergency evaluation. So every single day of the week, weekends, and during the night, a midwife will be available to take any phone calls from prenatal patients as well as pediatric clients. If they're in labor sometimes we do labor right in the clinic and then go on to the hospital. Sometimes we just have them meet us at the hospital.

Continuity of care is maintained during the interpartum period because one of us whom they've grown to know during prenatal care is with them in the hospital. Most of the clients leave the hospital within 24 hours except those who have caesarean sections. Once again, the nurse midwives from Mary's Center manage the women in the hospital during the postpartum period. The short stay aspect is supplemented by home visiting, a very important part of our program. Every mother and baby receives a visit within 24 hours of discharge. It's usually done by the two nurse midwives in the clinic or sometimes it's the social worker and a midwife or a midwife and the program director of our teen program depending on the clinic flow. Normally we do this through the use of a midwife. We also have been increasing our number of antenatal home visits. We've had very good results with that. We've had women who need to go on bed rest because of border-line hypertension and by actually telling them to be on bed rest and then come into the clinic for their prenatal bi-weekly visits, gets them sad so we go to their home and check on them and find amazing things. They're really not in bed, or they can't be in bed because they have four other kids or there's no where to sleep during the day. So that helps us a lot to investigate their social environment and really see how well our management plan fits in with their lives and what we can do about it.

As of October 1, we have delivered approximately 265 babies at Columbia Hospital and have done over 300 home visits to our newborns and other high-risk children. Our pediatric program is staffed by one full-time pediatrician on loan from the D.C. Commission of Public Health. We have our prenatal clients meet our pediatrician at about 36 weeks of pregnancy so they get to know her face, have an opportunity to ask her questions that they may have about their baby once it's born. She can start doing some more plugging on breast feeding at that point. Then she follows the child through the first 6 years of life in our clinic. Right now our pediatric program has over 500 participants receiving primary care on a regular basis. That makes it possible for a large number of preschool children to receive their complete immunization schedule prior to entering school. We plan in the near future to limit our pediatric services to well-baby and primary health, and pediatric care only to those babies who are born within our program. But until we reach our limit, we have opened the program to older children to help relieve the burden of some other pediatric clinics.

In addition to physician care, we also provide health education and parenting.

Pediatrically, we have a social worker for the pediatric case load and 24 hour accessibility by telephone for emergencies only. Finally, the D.C. Commission of Public Health is helping Mary's Center to reduce the cost of low-income families by providing free vaccines to over 3,000 children per year.

Now I'd like to talk a little bit about our program linkages and referral systems. We have on-site registration for WIC and for the emergency medicaid program which is what most of our women are eligible for even if they're undocumented. This shortens their waiting time for entry into the program as well as decreasing the burden on local WIC offices. Unfortunately in September, the woman who had been coming to register women for WIC has gotten very sick and we've found it very difficult to get another person from WIC to come to Mary's Center. So right now I'm in the process of negotiating with Children's Hospital to see if we can get someone to come right to our clinic. Columbia Hospital has a contract with a private agency and they come to our clinic twice a month and we help with the social worker. The women do all the medicaid paperwork which is tremendous. We have on-site distribution of infant car seats provided by the D.C. Department of Public Works. Layettes are provided to our newborns by the Christ Child Society. We take those out when we do our initial post partum home visit. We have free sonograms which are valued at about $200 provided by two private obstetricians in the D.C. area. We have free consultations with private physicians of various specialties through the Archbishop Network. So if a prenatal client would need a dermatology referral we can get that consultation to her for free. We have free amniocentesis and genetic evaluation through the Wilson Genetic Center at George Washington University and that's served through a Government grant. Columbia Hospital for Women accepts all of our patients for normal delivery and that's based on the emergency medicaid reimbursement. There's no additional exchange of money between the clients and the hospital. Holy Cross Hospital in Maryland accepts up to five high-risk pregnancies from Mary's Center each month. They provide prenatal care and full delivery services at a cost to our clients of $450, no matter how much intensive care the mother and her baby may need.

Let me explain that a little bit once again, because of our protocol as nurse midwives and because we are unable due to funding to have a physician provide comanagement for us, we have to risk out women who have developed antenatal complications like premature labor, low-line defense, and all sorts of things. We have an agreement with D.C. General Hospital to accept our clients with high-risk antenatal complications. So during the night if we have an emergency and we have to ship somebody out of the program because of premature labor, D.C. General is one of the hospitals in the area we use.

Finally, Clinic en el Pueblo which is in the Adams Morgan/Mt. Pleasant area provides free HIV testing, pre- and post-counseling for our clients. We know lack of or no prenatal care is one of the primary factors causing low birth weight, therefore, the staff offers services at Mary's Center under one roof, creating a support network for our clients who often have little knowledge of how to utilize the health care system. That's really what we're all about.

The impact we intend to make is to prevent the development of high-risk behavior in an otherwise healthy population and to routinely perform risk assessments in order to act upon adverse health practices immediately, while at the same time influencing the District government and the planning implementation in maternal and child health services to all mothers and children in the Nation's Capital. I'd just like to add that while programmatically this is a good program and is working well, we do see we have some obstacles and one that I've mentioned is that we're not able to comanage women that develop antenatal high-risk complications.

I feel and the nurse midwives that I work with feel, that many cases may have better outcomes if we were able to comanage them with physicians. If a contract could be established either at the hospital we're at or another hospital so we can manage them that would be helpful. In one case recently, we had this woman who had many social problems and because of that had persistent weight loss during her pregnancy so she's at risk for having a low-birthweight baby. Unfortunately, because it's a dramatic weight loss we're no longer able to manage her and we feel terrible about it. We have to send her out of Mary's Center now because of malpractice issues and the cost. She has to go to another clinic that doesn't know her and has a staff that doesn't speak Spanish. If we could hold on to her with physician comanagement she would probably have a better outcome. That's it.

STATEMENT OF PHYLLIS JOHNSON, DIRECTOR, INFANT HEALTH PROMOTION COALITION, DETROIT AND WAYNE COUNTY, MICHIGAN

Ms. JOHNSON. Good afternoon. I hate to speak before a meal. But I'm going to try to make the best of it in about 10 minutes.

First I want to thank the National Commission to Prevent Infant Mortality and the Select Committee on Hunger for inviting me here today. It's always a privilege to be able to share something positive about what's going on in the city of Detroit because like most big cities, the media does a very good job of telling you how terrible the city of Detroit is. But we are trying to do some very positive things. The coalition as Rae explained to you is comprised of public and private organizations, we've grown in the last year from having 25 agencies involved with working with us to 63. What I'd like to share with you briefly and this is going to be hard for me because I know I talk fast and when I know I'm on a time crunch I talk faster and when I'm excited I can double that. What I want to share with you just briefly is what we are doing in Detroit, and some of the programs that we've established through our joint efforts as a coalition. But most important, I want to share with you some of the lessons we've learned and some of the concerns we have, and how it relates to some of the work we hope to be doing in the next couple of years.

Whenever someone asks me to come and speak about outreach I always, I would say as of late, have had a deep ethical dilemma in my mind. How do I stand before a group of people and share all the wonderful things we're doing to reach women when I know in reality we have fewer and fewer services and dollars in the State of Michigan still servicing the women we do reach. So I'm sharing that with you as a personal side of me.

We have to define outreach in Detroit and one of the things we've found out is that basically for the residents of Detroit, if you can have a baby, you are at risk. One of things I've tried to struggle with over the last 3 years is that infant mortality is not just a problem of women, it's also a problem for men, it's a problem of the community, humanity, et cetera. As soon as we get to understand that we need not focus exclusively on women when we talk about infant mortality, the better we will be at reaching the people who need to hear about this problem and to make a difference in what we do. Now of course some women are at more risk than others, and you know of all the risk factors that we've dealt within maternal and child health. You know that poverty, lack of education, teen pregnancy, and I can go on and on, are the risk factors so I will not cover those again for you. We've taken basically three approaches as a coalition to try to reach mothers and infants. One is reaching mothers and infants directly through direct approaches. We have lay workers which we call maternal care advocates. We have a number of outreach programs, two of which I'll share with you a little bit in depth. Our focus is to try to get women in early in their pregnancy and specifically target those who fall into our high-risk group. We have a direct approach to these women and then we have an indirect approach. The indirect approach is through agencies that serve women. So we're targeting those agencies that not only serve child-bearing women, but young women. That's one of the lessons that we've learned, that if we focus on education and outreach efforts we wait until a women gets pregnant. So she's dealing with that as an issue as well as all the other social issues and we're really not as effective as we would be if we dealt with women prior to conception.

One of the things I do as a part of my outreach effort is go to a lot of high schools which has recently become a jolt to me also, because when I get into those classrooms, there are girls who are in the classroom who are pregnant already and many of the girls by the age of 13 have figured out their own values and a sense of what it means to become pregnant. What I'm saying to them is purely a joke. So we've learned that our outreach efforts have to start extremely early, very early. That if we're not talking to kids in elementary school and even in preschool, then we've probably already missed the boat in terms of talking about prevention and infant mortality and preventing infant mortality.

We also saw the need to reach providers as well as policymakers. I think a couple of speakers skimmed over the subject of policymakers and the issues regarding those significant people, but that is the most important group and we recognize that every day. If we don't impress upon them what the needs of our communities are, and if we don't take a stand in being politically active in addressing policy as it relates to maternal and child health, we will not make a difference.

Our outreach efforts are essentially three-fold. We work at programs, we have direct services, we do educate through media promotion and we do awareness activities and campaigns. These are the fun things that we professionals like to do. We have an infant mortality week. In those awareness campaigns we try to involve our legislators in some way.

The problems in Detroit are basically three: finances, transportation, and awareness of resources. We do have an abundance of resources and often times as one of the policymakers said today, a lot of the services go under utilized. So one of the major initiatives of the coalition was to bring those agencies together, to hold hands, to resolve the tough issues and say how can we work together to address the comprehensive needs of women. That is our major focus as a coalition. How do we coordinate services? How do we work with the schools? How do we work with the hospitals? How do we work with the providers? How do we work with the community groups, the sororities, the grass roots organizations, et cetera?

Now in the union of all those groups we've come up with two very, what I think are successful programs and that we've done what we said we wanted to do.

The first program is called 961–BABY. It's a 24-hour telephone hotline. It's one of the first in the country. Its been effective. We've reached over 10,000 women through this hotline. Its an information referral service. The coalition identified through its research that women just didn't know where these services were. They were interested in using the services, but they didn't know how to get in touch with them, didn't know the cost, et cetera. Seven-days-a-week, 24-hours-a-day this hotline answers calls of women in the community, some men, and some professionals who are looking for particular services. An assessment is done on each of the callers and we not only put them in touch with services they think they need, but we also put them in touch with services that we think they may benefit from. We do very little cross counseling however, we do try to do some guidance and help women move into the direction and the agencies that will best benefit them.

One of the lessons that we learned when we started this program which was originally designed to get women into early prenatal care, is that we could talk about going in for prenatal care, until we were red or blue or green in the face. The essential thing to many of the women who called that hotline was just the very basic human services, food, clothing, shelter, and money were needed. If we didn't provide a whole array of resources to put them in touch with those services, we could forget about getting them to go in for prenatal care. This is essentially what happened when we called to find out how a woman did when she called a provider to get prenatal care? The kind of answers we got were, "Well I needed to see a worker," or "I needed to get some clothing," or "My gas is about to get cut off." So then we had to expand that hotline to include some of the very basic human services so that health care could become a priority for the many women that we saw.

The program has grown from a program that was managed through fundraising to now being a State funded program. It only costs $50,000 to run this program a year. It does what it says it will do, and that is to put women in touch with services they need to promote a healthy outcome. Now whether or not it solves the infant mortality problem in another question. We certainly do think the program is making an impact, and it's doing what it is designed to do.

Now I need to tell you how this hotline number is promoted through a media campaign we've done. I'm going to give you some verbal bullets. Everything from PSA's, radio promotion, rap songs, classical piano, melody, billboards, baby seats, poster contests, community baby showers, grass roots presentations, symposiums, et cetera, et cetera, to get the word out. What works? Word of mouth. Recently, through the State of Michigan we started what's called a Baby Your Baby Campaign. They modeled it after Utah's, which was a big joke for Detroit residents. They had all of these nice blonde, clean, fresh, nature looking women, riding on horses through the wilderness and the clean fresh air and blue sky and then of course you know what Detroit looks like in the inner city. They were wondering why they didn't get any response to that. So one of the things they've learned through talking to agencies like ours is that you have to be very sensitive when you do any type of promotion like that. Who are you really trying to target when you do a campaign?

It's real important when you do media campaigns to have a slogan. Ours has been for the last 7 years "A Healthy Baby Begins With You." That applies to all individuals, not only to a pregnant woman. We started out with very simple types of campaigns that said things like, "If you're pregnant need help? Call 961-BABY," because we've found it had to be simple, it had to be quick and the message had to be clear and concise. What we've found is with our goal of trying to get women in for early prenatal care, was essentially, we didn't get them in until they were 6 or 7 months pregnant. So we changed the slogan. We got smart and we said, "If you think you're pregnant? Yes or No? Find the answer call 961-BABY." That was trying to target women who were sexually active. The program has worked very well and we've measured that not only by the number of calls, but by the effects on the major health providers in the area.

On the average, the average waiting list for health care in the city of Detroit for a pregnant woman trying to get her first prenatal care visit is 4 weeks. With our ninth Baby Your Baby Campaign, the State has poured $3.3 million into it. We don't have to do advertising anymore now that they are doing that. Our waiting lists are now averaging 7 weeks. The problem is we have no providers to see the women and we argue back and forth with the State for months. When are you going to launch this $3.3 million campaign? The Governor running for re-election? We are trying to get women into prenatal care, what are you going to do about the provider issue? The fact that we have only 13 certified nurse midwives in the area and we have thousands of births in the city of Detroit, and the fact that every year we lose three health care providers because of the malpractice dilemma, medicaid reimbursement, et cetera are real obstacles. No one hears me when I tell them that we have a current backlog that is tremendous and that we're preaching a conflicting message here. We're telling them that if you get in for early prenatal care and you get this many visits for prenatal care, how wonderful your outcome will be. However, when we give these same women a telephone number to call and make an appointment, one of the clinics tell them, well if you're only 3 months pregnant, no problem, you can wait. Secondly, even if they wait, they won't get in until they are 6 months pregnant. So we have a problem there.

One thing about the promotion of health care I think is important, is, I think health care is a business. We have to be about the business of marketing good quality health services; the importance of taking care of yourself at home, and that's where we re-focus, because it's important to get a women in to that doctor, to get women in to see that nurse midwife, but what you do at home is equally important. We need to promote education about what you do when you leave that doctor's office because the behavior makes a difference in the outcome of pregnancy.

One thing about promotion. It's very expensive unless you can get broadcasters to donate time. It is very, very costly. The promotion that we did from the coalition resources was very small, but they were effective. The thing that really made a difference was when we did our massive grassroots, get into the community church program. We went to basic women's groups and talked to them, saying tell a neighbor, someone who is pregnant, tell her about 961-BABY. At least we can find health care and human services for her. The other thing we did was tag onto agencies who had money. So if the agency was promoting, for instance, K Marts was promoting baby clothes for Easter, we asked them to tag on 961-BABY to any advertising that they did. They were willing to do that. The cost of tagging on a statement like call 961-BABY is relatively inexpensive. So joint advertising was a way that we did promotion very well.

The other good thing that we've learned in the process of promoting our hotline, was that 55 percent of the women who had babies in the city of Detroit could not read above a 4th grade level. The majority of the materials from providers that were circulated when we reviewed them were at the 10th grade reading level or higher. So we had to break down some of the literature and our literature is very colorful, very simple. We try not to be offensive because a lot of women do read. We don't want to get the reputation that all of the citizens of Detroit that have babies are illiterate. But we did have to adjust the reading materials. The medicaid application was at the 12th grade reading level. It was very hard to try to describe urination because a lot of women didn't know what that means. Nor did they know what prenatal care meant, and if you asked five different women, you'll probably get five different answers. We had to implement a total re-education process to identify what was prenatal care and were the women truly getting prenatal care. We had a lot of private providers in Detroit who take medicaid standard insurance and they do a lot of fly-by-night medical care at the walk-in clinics and many of the women were not even getting their blood pressures taken. They were thinking that they were getting prenatal care. So we've got a lot of issues to deal with and we've learned a lot of lessons but one of the things that's most important is education and I think Dr. Baumslag said it. We have to educate women and we have to work at educating younger women and most importantly we have to involve men in this process.

We have a lot of initiatives going on in Detroit that are called male responsibility programs and I always chuckle at that because certainly they're responsible and it's like they're just becoming aware that men have something to do with getting women pregnant. That when infants die it's as if it's the woman's infant and not a man's infant. Nor do they recognize that 86 percent of the women who identify that they were drug users are not in drug treatment programs. By association with a man, 80 percent of them began using drugs. So we are learning a lot about what's happening with health and women and we're learning that it's important to involve men in the process. I don't mean that negatively guys because I love men, don't get me wrong. I just think that we're focusing too much on women in this infant mortality problem. Yes women are the ones who become pregnant, but this is a male and female problem. It's a human problem.

We have another program that I'm just going to tell about briefly because its new. It's a healthy baby service which is an advocacy project that uses lay workers like Dr. Hullett's program. It provides support and guidance and the program is designed not only as a health program, to get women into health care, but it recognizes that infant mortality is a social problem as well. Some people may call the program expensive because we provide transportation to 28 health facilities throughout Detroit, but when you compare that to what it costs to house eight prisoners in Jacksonville, Mississippi jail it is not expensive. If you compare that to what it costs to keep 10 neonates in ICU because they are low-birth-weight infants for 1 year it's not necessarily as expensive.

The program has served over 3,000 women and we've increased the average number of prenatal visits for women who have transportation. Our lesson briefly, we have to be more sensitive in doing most of our promotions. Our promotions look as if they're designed for white American women and somehow we forget that African-American women have a culture. They have needs that are specific to their group. We need to be more sensitive to that because the infant mortality rate is twice as high with black women and we need to spend more time looking at what are the differences and how young black women see pregnancy and not compare our births and deliveries and outcomes in pregnancy to that of white Americans. We also need to be sensitive in Detroit to the Hispanic group, the Asian group, the American Indian group, and the Arab American group. Some of the areas in Detroit have infant mortality rates for Arab Americans as high as 63 percent. We have of course pockets in Detroit for black women as high as 41 to 52 percent. So we have a problem as you can see. Are we making a difference? I don't know. Will we continue to try to make a difference? Yes, yes, yes. That's about all I can do in 10 minutes.

Ms. GRAD. Thank you. We will break for lunch.

LUNCH RECESS

Ms. GRAD. We're going to go ahead and have our after luncheon keynote speaker. Before we do that I'd just like to thank some people publicly who made the symposium come together. My sister Patricia Johnson, we've just decided we're related, from the Select Hunger Committee. Patricia you're amazing. And on my staff Valencia Clarke and Pradeep Gidwani. Without them this definitely would not have happened. Also for those of you who did not get a chance to meet Rick Farrell, he's sitting right here. Rick is the vice president for Syntex and again Syntex has allowed us to come together and eat a nice lunch.

Now I'd like to introduce our keynote speaker, Dr. Herbert Nickens. Dr. Nickens is the vice president and director of the Division of Minority Health Disease Prevention and Health Promotion at the Association of American Medical Colleges. The purpose of his division is to focus commitment by the medical professionals on improving minority health status. Before his current position Dr. Nickens was the first director of the Office of Minority Health in the Department of Health and Human Services. Prior to that, he was director of the Office of Policy, Planning and Analysis of the National Institute on Aging within the National Institutes of Health. Prior to his work in the Federal Government, Dr. Nickens was a Robert Wood Johnson clinical scholar and a member of the faculty the School of Medicine at the University of Pennsylvania. Dr. Nickens has received numerous honors including the History of Medicine prize from the University of Pennsylvania and the Laughlin prize from the National Psychiatry Endowment Fund. He's a member of several boards and organizations. We are pleased to have him. But I must tell you that at lunch we were talking about his wonderful 17-month-old daughter and he equated the early months of childhood to a kumquat. Dr. Nickens. It is with great pleasure I present Dr. Herbert Nickens.

STATEMENT OF HERBERT NICKENS, M.D., VICE PRESIDENT, DIVISION OF MINORITY HEALTH, DISEASE PREVENTION/HEALTH PROMOTION, ASSOCIATION OF AMERICAN MEDICAL COLLEGES, AND FORMER DIRECTOR, OFFICE OF MINORITY HEALTH, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Dr. NICKENS. Thanks a lot Rae. It's all relative. I'm a very proud father, but it's not exactly the most interactive stage at 3 months. I'm just going to talk today about legislative strategies for reducing infant mortality and as Rae indicated, my special interest is in minority populations and so while I may not use the word minority throughout my talk; a lot of what I'm saying is coming from that background and having just gone through the process at least the male part of the process of childbearing, it's clear that there's a difference between the haves and have nots in terms of the way this process goes. So I want you to keep that in mind as I talk. I don't think my wife and I really needed a lot of help, but on the other hand society shouldn't depend on two physicians as your model form for establishing national policy.

When I thought about this issue of legislative strategies I was thinking the phrase legislative strategy really seems like a oxymoron. Indeed, in the eyes of the observer, since the mid-1970's and perhaps before, we've really not had a coherent vision from our national leadership as to how to solve our problem of the haves and have-nots, including the health problems of the have-nots. We've also had enough theorizing I think. We've had enough demonstration projects, trials, and model programs. I think that it's time we start thinking about national policy and implementing things. I don't think we have a last ounce degree of what doesn't work, but we certainly know what works, and we can implement those. I'm sure this audience is familiar with basic infant mortality statistics, but just to review them for various minority groups.

As you probably know the U.S. white infant mortality rate alone compared to other countries ranks 14th in the world. That's 1986 data. Since that's the last date that we have for other countries. By the way this is not widely known. I had a discussion not so long ago with the director of a major pediatric resource facility in this country, and I told him that statistic and he didn't believe me. He had the impression that the only reason that our infant mortality statistics looked so bad was because of the black population. So I think that tells you something about the level of sophistication of what's going on in our country. If you just look at the overall health status of white Americans it's pretty lousy frankly. So when you talk about minorities, you're talking about subsets of lousiness and I think it's important to keep that in mind.

The U.S. black infant mortality taken alone is 36th in the world. Hispanic infant mortality rates nationally are really not available because Hispanic is not a race, its an ethnicity and so we have some local data, but it looks like the Hispanic has an infant mortality rate close to those of whites. However, Puerto Rican infant mortality rates appear to be somewhat higher, somewhere between those of whites and blacks.

Native Americans infant mortality rates are also surprisingly good. Close to that of whites, but I think it's important that these rates are highly unstable because of the fertility of Native American populations. It's also important I think to point out that Indian infant mortality rates are an example of success over the last two or three decades. Apparently there's been a big drop and I say apparently because of some of the data questions. I think we can look to the Indian Health Service and other groups that have been active in this area and it shows you can make a difference if you try.

Finally, Asian Pacific Island infant mortality rates are also close to those of whites although we don't know quite what's going on with the newly Southeast Asian refugees. The other thing I want to point out about minority infant mortality rates is that the infant mortality of blacks and whites have been really diverse in the last few decades. In 1950, black infant mortality rates were 164 percent higher than that of whites. In 1987, black infant mortality rates were 208 percent higher than those of whites so we're going in the wrong direction if our goal is parity.

Now what's the significance of infant mortality? Why are we here? Why do we talk about this? There are two points I want to make. First, if you view the patterns of death rates across industrialized nations, across the life cycle, there are two particularly hazardous times in life. One of them is infancy and the other is old age. Now the high death rates are not reached again until we get to about age 60. So if you look at the probability of death through the life cycle it's really a U-shaped curve. That's the first point I want to make about infant mortality. The second point is that infant mortality is not a disease entity like cancer. It's defined as the death of an infant in the first year of life, whatever causes it. Because of this multiple causation, because of the importance of children in societies and because of the vulnerability of children, infant mortality has long been viewed as the best single and most powerful general indicator of the overall well-being of society. That's really the significance I think of infant mortality. All of the socioeconomic, education, and health indicators of the population come down to the probability of infant survival in the first year of life. I think that's why we focus on this issue.

Now, following on this discussion of legislative strategies to attack infant mortality they can be conceived of as narrow or broad. I want to address both narrow and broad targeted remedies. The more narrowly based strategies address the mother and child from conception to delivery and a little beyond, but might not address the father much at all. Moreover, channels for intervention tend to be more medically oriented more biological. The broad strategies focus on the overall family context, father and mother prior to conception, and focus on the overall well-being of father, mother, and child through pregnancy and through the development of the child. This perspective recognizes that today's toddler is tomorrow's parent. I want to repeat that, today's toddler is tomorrow's parent. That's a very important perspective. Channels for broad intervention are not only medical, but social, educational, and job training issues just to name a few.

Now I do understand that what I'm setting up here is not an either or, it's not a narrow versus broad, rather really a series of concentric circles. The smallest of which focus on the mother and child as sort of a biological unit where we understand that they are the patient or the client. The larger circles include the mother and child and the larger family and socioconomic context. That's what I'm trying to set up. Now to get to the issue of legislation. Much of the legislative strategies have focused on the narrow view. I think that's because we've been depressed for a long time. The vision becomes a luxury that people don't allow themselves, no one wants to be embarrassed or be called wide-eyed or naive. I don't mind being wide-eyed and naive. I think it's not so bad.

One of the things that's really been focused on a lot is the issue of expanding medicaid and eligibility and the benefits that are under medicaid. I think that's important, but not enough. Even if we get women and children eligible for medicaid at 185 percent poverty or 200 percent of poverty. If we give WIC benefits to all potentially eligible, even if we get immunization rates up to what would be optimum maximum acceptable level, in many minority communities we will just manage to save a few more children to face a very tough existence. We will still have a system that has many holes in it.

Now let me just egress a minute to talk about the current state of minorities in America.

I think first we can no longer talk about majority and minority America. Our Nation's clearly much too diverse to really talk this way. Blacks are now about 57 percent of minorities in this country. In shorthand, if we look at income, educational achievement, and health status, the black community is indeed troubled. That's not a highly statistical kind of summary, but I think it does summarize unfortunately the state of black America. Native Americans and Puerto Ricans are also not doing very well, but probably not as bad off as the black population. Mexican Americans, Central and South Americans and Southeast Asians are currently now poorer with little educational achievement, but not yet locked into failure or success. Its important to emphasize that those groups can go either way.

Now in the time remaining I want to argue for an aggressive pursuit for a broadened legislative strategy. I think that as I mentioned the time for a depressed sort of vision is over. I don't think we're going to lose anything. If we're going to lose, we might as well lose big. I understand by the way that from the perspective of Capitol Hill when you're differing you say give me two of these, I'll give you two of those, that's the kind of horse trading that goes on, but that's part of the process. That shouldn't interfere with our vision. That should be what you finally have to settle for when you get to the table. Unfortunately, that's become our limit of scope. One of the things that I want to talk about is what elements make up this broader strategy and how those elements might relate to each other. I've itemized seven things that I think are important in any broader in strategy. They're not all equal in size, but there are seven of them. The first one is universal health insurance. We have a national embarrassment on our hands. It's certainly become a part of the rubric that South Africa and the United States are the only highly industrialized nations without a universal health coverage scheme. That rubric has lost it's power apparently. So we have to think of something else to shock people, but the fact is it's still a national embarrassment.

I recently visited the United Kingdom and I was very embarrassed to be an American there, to talk about health problems. The debates there begin with the issue of having national health insurance and how we're going to best manage within budget constraints. Our debate begins at a much lower level so that's the first thing we must have, national health insurance. Medicaid has some serious problems. I think you're probably familiar with them, but I do want to mention them. First of all, its not universal, the other thing is that it disguises our absence of a long-term care policy since about 40 percent of medicaid moneys go to pay for long-term care. So it's kind of a cover, in a sense. Second, it's seen by patients and providers as third class. That's unacceptable. It's seen by providers as slow pay and low pay. It also has a stigma of poverty attached to it. And finally, it has attached to it this myth of litigiousness. It's often heard when you talk to providers about medicaid patients that they sue more and there's no data really to support that, but it's one of those rumors that will not die. So I think that medicaid has lots and lots of problems. I'd be very happy to get higher medicaid benefits, but we really have to do better, not to mention the cost of administering this complex system which we call diverse.

Second point, we have to institute outreach and home visiting into any kind of legislative strategy. It's one way to get prevention information to people. It's one way to do case finding. It's one way to do social support. There are a lot of things you can do once you get into people's homes and into people's communities. Now I'm not naive and I understand that home visiting is not an easy thing to do, but it really needs to be done. There's no other way. It's also a good way to bring people into other kinds of programs that are run more efficiently, run centrally, but we have trouble getting people to come. The third point is to increase access strategies. There are a whole lot of things that create barriers to access even if people have insurance, such things as paperwork, transportation problems, problems of amenities in clinics. Many clinics that you go into, you are insulted just to sit there. I think the hostility that you encounter in most public facilities is a serious barrier. If nothing else it produces reciprocal hostility in the patients or client. And this sort of, "What do you want?" approach when you walk in the door. It's very, very discouraging.

The fourth point is schools have to be used. We have to tie the education system into this. Schools are where kids are. There aren't a lot of valuable social institutions in poor communities left. We just have to use the schools better. We have to use the SBC word, school-based clinics. There's just no way around it. We have to do something about that. I understand the moral issues involved and all the baggage that it carries, but we have to find a way to deal with the fact the school-based clinics do deliver something other than just condoms and other kinds of contraceptives. There is health other than sex. We have to assert that issue very vigorously in the legislative arena. It's also true that you can use the education setting for a lot of support groups and prevention of drug abuse and other kinds of services that kids need. But your really can't find kids anywhere else, so I think you have to use the education system. We have to do it fairly early, because if you wait until the senior year of high school, we've lost a lot of kids.

The fifth point is we have to do something about primary care. In the last graduate questionnaire 25 percent of medical students said that they were interested in a primary care career. That's 75 percent that are not. Primary care in this case includes general internal medicine, pediatrics, and family practice. There are two points about primary care. No. 1, we have to face our national hypocracy about this issue. Those of you who work on the hill, who does your member go to see when he's sick? Does your member go to see a family practitioner or does he go to see a cardiologist? America is preoccupied with the best kind of approach so we have to deal with that issue. It's not just the elites that drive this issue of primary care and scarcity, it's our own national character. We have to somehow wrestle with that. That's not only a legislative issue, but it does need to be a matter of public education.

So that's No. 1, because as long as patients demand it and are willing to pay for it then you've got a market. People will go into it, medical students are voting with their feet. The other, is that any strategy, any legislative incentive has to focus on the individual, the student in this case, who is choosing a primary care career. Institutions don't really have that much control believe it or not over this issue. They don't tell students to go into specialties you know. Students have eyes and they see, so they choose. So things like the National Health Service Corp are very important and we have to make sure that program not only survives, but is expanded. Particularly, I think the National Health Service Corp is important when you're talking about loan repayment. You're going to get much more of a chance of the National Health Service Corp really fulfilling its mission if students freely choose right before they make their service to do this. Loan repayment is something they can choose after they are educated and their about ready to do their service.

I think we also have to do something about this urban versus rural distribution problem. Its been a real difficulty. I used to get phone calls all the time because people are desperate for some kind of ombudsmen. I still get them occasionally from someone who grew up in the Bronx and is being sent to nowhere Montana to serve their National Health Service Corp obligation. The other thing you get of course occasionally is a real racial incidence where a black kid from New York or Boston gets sent to Appalachia. So I think that making the decision closer to the time when the assignment is made will also tend to rationalize the system so that it doesn't violate individual needs so much. We may actually get people to stay where they are assigned, which is the purpose of the program, and not just to get 3 years of service or 4 years of service out of someone.

The sixth point is the problem of residential drug treatment for pregnant women. It is an extremely difficult issue. One of the things that is happening is that we tend to use jails as residential treatment programs for pregnant women. There is a whole set of women getting arrested for giving drugs to a minor; that is, their fetus. That's societies' response. I think that we can be more creative than that; also more constructive. I have on occasion talked to women who have been substance abusers and are in danger of, or have lost their children, and it's a powerful incentive, probably the most powerful, to try to deal with the issue of addiction. So I think if we ever have a lever to deal with the issue of addiction, trying to raise a healthy, happy baby and make sure that you have custody of that child is one type of incentive. We really need to get that woman at what we sometimes call a teachable moment in her life.

The seventh point is mechanisms to link services together. It's amazing, the level of disorganization we have in our system. Part of it starts right here on Capitol Hill. We have 99 million committees and authorizing legislation and different departments and bureaucracies that are fed and there's one patient out there who's certainly the recipient of all of this. It gets replicated at the State and local level as well. All of that reflects itself in bureaucracies that sit out there and don't talk to each other. Advocacy groups that don't talk to each other and who advocate for their single interest. Buildings are separate so they have to literally walk from building to building to building to get services.

I've made a list, and I'm sure its a partial list of a variety of funding streams that are represented and its quite long. Health insurance, immunization, STD, drug use, mental health, social services, HIV and AIDS, community health services, contraceptive services, education systems overall, and WIC. That's just a partial list that has different funding streams, and a conscientious local official has to figure out how to make all of this fit together and come together around a client. I think that's too big a burden. There's no reason we should start out with a crazy system and say fix this. I think we can start out with a more rational system. We can pass some synthesizing legislation as well. Case management is important but also with comprehensive one-stop shopping that you're beginning to hear about. I do understand that there is a one-stop shopping provision that may become enacted in the future under the Maternal and Child Health block grant, but I don't think that's the same as setting out to create a rational system, it's just a provision in a block grant. Before I close, a few months ago I don't know if you all remember, there was a cover article in the Washington Post called "France Wants Me to Have This Baby." I've never been able to forget that. I was thinking about our country and it seems to me that national policy and legislation in America at this time sends a very different message. Something like, "Oh yeah, regarding your baby, good luck." The time is approaching very soon when 40 percent of our school-aged children will be minority. Our current laissez-faire policy about our young people is not only immoral, but it's stupid as well. I hope we can do much much better.

Thank you very much.

Voice From Audience. What can business do to assist with the problem?

Dr. **Nickens.** We need to build a new constituency that includes businesses. I think American business in many ways is recognizing the future, and particularly their need to compete on a world-wide basis. There have been substantial funds committed by businesses to education. I think they could probably be enlisted as partners in some of this by trying to help their minority employees of the future get a good start in children's and youth programs. I don't know if that alliance has been made as well as it could be. I think that argument is getting stronger as people get more worried about the education level of our population and other kinds of problems of deprivation. The statistic I gave about 40 percent of school-aged children is one that gets talked about a lot in sort of business roundtable settings.

Ms. **Grad.** I want to recognize Walter Shepherd. Walter is here from North Carolina for those of you who don't know him. Walter is the newly appointed, executive director for the North Carolina Infant Mortality Commission. We hope to be doing a lot with Walter down in North Carolina to show how a state can do it so we thank you for being here Walter.

STATEMENT OF WALTER SHEPHERD, EXECUTIVE DIRECTOR, NORTH CAROLINA INFANT MORTALITY COMMISSION

Mr. **Shepherd.** A comment of encouragement, and that is, North Carolina like most States has faced a major budget crunch. It complained of a pending $300 million plus cost budget deficit this last short session of the legislature. However, our State legislature passed a $10.3 million infant mortality bill even with that opposition. Of this money 13.5 percent supported the establishment of certified physicians, nurse midwife teams, and further expanded our maternity care coordination concept. It also expanded our rural obstetrical care initiative which provides assistance to physicians and nurse midwives practicing in rural areas.

Ms. **Grad.** I hope this is only the beginning of what will be a continued effort to network. As I said earlier, we didn't have a chance to ask all the questions. I know I've made many notes to contact some of you and I hope you've done it as well. So let's make a commitment that we will get all of your mailing addresses and then to get to me or Patricia ideas that you have.

The House Select Committee on Hunger and the National Commission to Prevent Infant Mortality want to continue to work together. So if there are topics or places or things or concepts we should explore, talk to us. Tell us what you want and we'll probably end up doing it. But if you remember, my challenge this morning was not to have you just absorb the information, but to do something with it. So think about what you heard today. Think about who you could talk to, Members of congress, members of the

administration, to each other, corporate people and really try to take the knowledge and move it a step forward.

Thank you for attending.

[Material submitted for inclusion in the record follows:]

INFANT MORTALITY IN MINORITY COMMUNITIES

Infant mortality rates in minority communities reflect the great need for programs which provide comprehensive prenatal care, including outreach, education and nutrition counseling, as well as pediatric care, immunization programs and accident prevention awareness. Indications are that women who are poor, very young, black, Hispanic or Native American are less likely to obtain adequate prenatal care than women who are older, white and economically advantaged. In 1987, the percentage of black women with no prenatal care during the first trimester was 38.9. In that same year, the percentage of Native American women with no prenatal care was 39.8. Lack of prenatal care precipitates the stark ratios of low birthweight infants born to women in minority communities in general, and black women in particular. In 1987, the low birthweight rates for Hispanics and Native Americans was 6.2 percent; for Asians, 6.4 percent; and for blacks, this percentage was 12.7. Low birthweight is largely preventable through adequate prenatal care and proper nutrition. However, sociodemographic factors such as limited education, teenage pregnancy and, most significantly, poverty, increase the chances that women of color will have limited access to health care services.

o **In 1987, the white infant mortality rate was 8.6 per thousand live births; the Hispanic rate was 7.9; the Asian rate was 5.4; the Native American rate was 9.9; and the rate for African-Americans was 17.9. Thus, African-American infants are twice as likely as white infants to die in the first year of life.**

o **Forty percent of African-American and Hispanic women receive late or no prenatal care. Further, African-American women are twice as likely to experience a variety of adverse pregnancy outcomes including prematurity and low birthweight, as well as infant and fetal death.**

o **The lifetime custodial cost for the care of a low birthweight infant can reach $500,00 or more. What is now spent each year on neonatal care for low birthweight infants could pay for prenatal care for more than four million pregnant women.**

A report issued on October 1, 1990 by the U. S. Department of Agriculture strongly indicates that participation in the Special Supplemental Food Program for Women, Infants and Children (WIC) during pregnancy is associated with increased infant birthweight and reduced Medicaid costs. This report accentuates the significant and vital role that WIC serves in the improvement of maternal and infant health as well as in the reductions in Medicaid costs.

INFANT MORTALITY IN RURAL COMMUNITIES

Chronic malnutrition, limited prenatal health care and exclusion from health care assistance are all factors which affect maternal and infant health in rural communities. In terms of nutrition, research indicates that the nutritional status of rural poor women is far below acceptable standards. America's poor consume diets which are inadequate in vitamins A and C, iron and calcium. In terms of health care, rural women are less likely than urban women to receive prenatal health care. Factors such as inability to pay for care, sharp declines in availability of rural obstetric providers, and difficulty with transportation can affect rural women's access to basic obstetrical services. In terms of health care assistance, there are serious inequities between rural and urban participation in AFDC and Medicaid programs. Because Medicaid requirements are in most cases based on AFDC eligibility, many two-parent, low-income rural families, are categorically denied Medicaid benefits.

- **The rate of teenage pregnancy is 25% higher in rural areas. Infants born to teens are twice as likely to die before age one, and two to three times more likely to be low birthweight.**

- **In 1987, although infant mortality (death from birth to age one) rates were 2 percent higher for whites and 8 percent lower for blacks, fetal mortality (death in utero) ratios were 6 percent higher among whites and 14 percent higher among blacks in rural compared to urban areas.**

- **Although rural obstetricians are more likely to take Medicaid than their urban counterparts, the ratio of obstetricians to births is more than twice as high in metropolitan areas than in non-metropolitan areas.**

The Supplemental Feeding Program for Women, Infants and Children (WIC) is particularly important in rural areas because it assists low-income rural mothers in obtaining timely prenatal care. Another important assistance program is the Infant Mortality Initiative established by Congress in 1987, which appropriated funds for Community Health Centers and for Migrant Health Centers to provide improved maternal, infant and child health services designed to reduce infant mortality.

IMMUNIZATION

More than one quarter of a million children die every week from easily preventable illness. Every day, vaccine-preventable diseases such as whooping cough and tetanus kills almost 3000 children. Measles claim 1.5 million lives a year, while tetanus kills three-fourths of a million children each year. Early immunization is one of the greatest available opportunity to save the lives of infants. Complete immunization coverage is inexpensive and cost effective; the complete vaccination of a child for measles, rubella, mumps, polio, and diphtheria, tetanus, and pertussis (DTP) only costs $1.50, and every dollar spent on immunization saves more than $10 in future health care costs. Thus, both lives and money could be saved with early immunization.

- **In the past ten years, immunization has radically decreased infant mortality rates in developing countries; nearly two-thirds of the developing world's children are now completely vaccinated. However, missed opportunities for vaccination are still responsible for many deaths; 89% of children in the developing world who receive health care at a clinic are not immunized before leaving the clinic.**

- **In the United States, 80-90% of measles among pre-school children can be prevented by proper immunization. In 1989, there were more than 15,000 cases of measles, five times more than in 1988. One-third of these cases were among children of pre-school age.**

- **By school age, 90% of American children are immunized. However, only 70% are immunized by the age of two.**

- **Only 50-65% of two-year olds living in the inner city are fully immunized. The Surgeon General's goal is to have 90% immunization by the age of two.**

Currently, the Centers for Disease Control is undertaking a domestic Infant Immunization Initiative which focuses on studying service delivery, obtaining a national immunization estimate, education and gathering information, developing interventions for the problem, and conducting surveillance of immunization practices. This initiative focuses especially on overcoming the difficulty with immunizing children under two years of age and the special difficulties faced by children living in the inner city in gaining access to immunization opportunities.

BREASTFEEDING

Breast milk is the ideal food for an infant. Breastfeeding can be a preventive health practice in the health care of newborns and infants. Breastfeeding has been found to decrease infant mortality by protecting against diarrheal disease and respiratory infections, protecting against measles for up to nine months, and providing the infant with a steady source of easily digestible food of high nutritional value. The World Health Organization has estimated that **mortality during the first five years of life would be reduced 25% if breastfeeding were more effectively promoted.** Breastfeeding also benefits the mother by helping to contract the uterus and alleviates postpartum hemorrhaging.

Breastfeeding is a cost-effective way to nourish an infant for up to one or two years. It is also a low-cost alternative for low-income families who often spend 30-75% of their income on infant formula. Nearly $30 million could be saved on the Special Supplemental Feeding Program for Women, Infants, and Children (WIC) program if the recipients nursed for even one month in lieu of using infant formula. Paradoxically, it is the poorest women who could most benefit from the monetary and health benefits of breastfeeding, who least practice it.

- **The Agency for International Development (A.I.D.) reports that the risk of death from disease for non-breastfed infants is nearly twice that of breastfed infants. The younger the infant and the longer the period of breastfeeding, the greater the mortality reduction.**

- **Non-breastfed infants are 5 to 17 times as likely to have diarrhea as exclusively breast-fed infants.**

- **Mothers in developing nations breastfeed more than do mothers in the United States and other Western nations. In 1985, only 60% of infants in the US were ever breastfed as compared with 100% in Ghana, 98% in Kenya, 96% in Indonesia and 97% in Bolivia, and only 30% of US infants were breastfed at 5-6 months postpartum.**

- **In the US, while 70% of women whose family income is over $25,000 breastfeed, only 35% of those with a family income of less than $7000 breastfeed.**

Several programs are underway that encourage breastfeeding both in the US and overseas. Groups such as La Leche League promote breastfeeding via mother-to mother support groups. A.I.D. has initiated a breastfeeding promotion initiative under its child survival program.

ORAL REHYDRATION THERAPY

Diarrheal disease is the most common cause of death and illness among children under five in developing nations. Although the incidence of diarrheal disease in the United States is relatively less severe than in the developing world, the numbers of children affected for such an advanced nation is significant. In the United States, approximately 500 children die each year from diarrhea, and 200,000 are hospitalized each year for diarrhea.

Oral rehydration therapy (ORT) is a safe cheap, effective, and simple way to combat dehydration resulting from diarrhea. ORT is a mixture of sugar or cereals with salts and water and is used at the onset of diarrhea to prevent dehydration, hospitalization and even death.

- **After a decade of global efforts to promote ORT, one million lives have been saved annually, but more than 2.5 million still die each year from dehydration. Presently, one in three families in developing nations use ORT, but this practice is neither used nor well-known in the United States.**

- **Every year, the United States spends $560 million on the cost of IV therapy for the treatment of dehydration from diarrheal disease. ORT costs only one-eighth of this amount.**

- **Most deaths from diarrhea in the United States occur in the South; in Mississippi, the diarrheal mortality rate is 68.5 for every 100,000 black live births (10 times that for white infants).**

- **Black infants are four times as likely die from the dehydration resulting from diarrhea as white infants.**

Currently, the National ORT Project promotes the use of ORT domestically, in lieu of the more expensive and protracted IV therapy which is still popular in the United States. The Project focuses on the use of ORT among infants in the United States, and on promoting its practice in the home by educating mothers on its merits. It does this through educating the public about ORT and on encouraging doctors to practice it more widely in the United States.

(insert 15 - 24)

National Commission to Prevent Infant Mortality
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HOME VISITING FACTS

- Home visiting is an early intervention strategy featuring the home-based delivery of preventive health care, health education, support services and linkages to existing services to pregnant women, parenting families, and children. Home visiting can be provided by nurses, social workers, nutritionists, developmental specialists, paraprofessionals, or trained lay workers.

- Home visiting is particularly effective in helping high risk families connect with available health programs because services are delivered in a non-threatening environment (the home) by trusted professionals or trained workers from the community. Home visitors can help families access existing preventive health services by providing transportation, child care, education, encouragement, social support, referrals, and assistance in applying for care.

- Home visiting is an important feature of the maternal and child health programs of nearly every industrialized nation's health care and social support system. In Great Britain and Denmark, home visiting is provided without charge to virtually all families with young children. In the United States, home visiting is rarely available despite the demonstrated benefits and cost savings associated with this preventive strategy.

- Recent attempts to increase the availability of maternal and child health home visiting services in the United Stated have failed. The Medicaid program does not explicitly cover home visiting as an optional service, and recently enacted legislation to develop home visiting services through the Maternal and Child Health Block Grant, have not been funded. Home visiting services in the United States remain fragmented and underfunded.

- Research and program experience, both domestic and international, show that programs which use home visiting are successful in:

    - *reducing the incidence of low birthweight babies;*
    - *increasing the use of preventive health care services such as prenatal care, well-child check-ups, and immunizations;*
    - *encouraging healthy behaviors, such as better nutrition and reductions in smoking during pregnancy;*
    - *reducing the rate of accidents during infancy;*
    - *reducing the incidence of child abuse and neglect;*
    - *improving parenting skills;*
    - *increasing IQ scores;*
    - *decreasing the rate of school failure and welfare dependency, and;*
    - *generally promoting children's healthy growth and development.*

- For any further reductions in the United States' infant mortality rate, we must implement policy and program changes that recognize infant mortality is less a health problem than a social problem with health consequences. Home visiting can help us to better understand and deal with the social circumstances in which at-risk pregnant women and children live.

HOME VISITING IS WIDESPREAD IN COUNTRIES WITH INFANT MORTALITY RATES LOWER THAN THE UNITED STATES

- In ENGLAND, once a pregnancy is confirmed and the family doctor makes a hospital booking for the delivery, the midwifery service is notified. The midwife visits the pregnant woman's home to assess the needs of the woman and to help her take care of her pregnancy. The midwife encourages the woman to get prenatal care, offers social support, health education, advice, and referral to other services such as a parenting education class. The home visitor also leaves behind a pregnancy book for the mother. Within two weeks after returning home, every mother and newborn in the country regardless of financial status are again visited, at least once and more often if needed.

- In FRANCE, the Maternal and Child Health clinics established after World War II, still provide free prenatal care to all women. Home visiting is an integral part of the services these clinics provide in order to reduce the incidence of preterm and low birthweight babies. Midwives or nursery nurses visit the home to observe the living conditions and needs of the pregnant woman (food, housing, heat, etc.), to encourage their use of prenatal care, and to assist them in adopting healthy behaviors, such as good nutrition and smoking and alcohol cessation.

- In DENMARK, home visiting services were established by law in 1937. Although an optional service, ninety percent of all Danish infants live in counties served by home visitors. All new mothers are visited within a week of returning home from the hospital and are given an automatic appointment to have their baby seen by a doctor by eight weeks of age.

HOME VISITING PROGRAMS CAN MAKE A DIFFERENCE

- A recent eight center, four year study sponsored by the Robert Wood Johnson Foundation reveals that home visiting, coupled with other early intervention services, helps low birthweight babies, who are at risk of multiple health and developmental problems, achieve significant gains in IQ scores over infants without such intensive early intervention services.

- With funding from the Ford Foundation's Child Survival/Fair Start initiative, five locally developed home visiting programs in underserved rural and urban communities use paraprofessionals to make home visits to low income families at an average cost of $50.00 per visit. Participating families demonstrate increased use of cost-effective preventive services, more appropriate childrearing, and improved infant development.

- Beginning in 1978, the Prenatal and Early Infancy Program in Elmira, New York, a professional nurse home visiting program has resulted in health gains including higher birthweight babies born to teen mothers and smokers, fewer kidney infections during pregnancy, fewer cases of child abuse and neglect, and four years later, more months of employment, fewer subsequent pregnancies, and a delay in subsequent pregnancies.

- The South Carolina Resource Mothers Program was able to reduce the percentage of small-for-gestational age infants by fifty percent through home visits to pregnant adolescents by trained lay workers.

PREPARED STATEMENT OF NAOMI BAUMSLAG, M.D., WOMEN'S INTERNATIONAL PUBLIC HEALTH NETWORK, BETHESDA, MD

> *"Too often in the past MCH services have been regarded as fancy trimmings to a health service whose only serious functions were to stamp out major communicable diseases and to provide hospital accommodation for grave disorders."*
>
> C.D. Williams

It is a sad reflection on our society that whenever there is a need for war fodder, efforts are made to improve infant health and only then is attention paid to maternal health.

HISTORICAL PROGRAMS FOR CHILD SURVIVAL

An innovative program to deal with infant mortality was started by Pope Pius II in the 13th century. At that time unwanted infants were thrown into the Tiber river. When the fishermen drew attention to this dreadful state of affairs, the Pope set aside a hospital for foundlings. Special rotating barrel-like collection boxes installed in the outer wall of the foundling hospital, in which unwanted infants were placed by mothers who remained anonymous. These infants were received and nursed in the hospital by wetnurses. Music was played on the flute and lute to optimize lactation . The children were taught to be musicians and singers and raised funds for the hospital by singing throughout Europe. Poor girls were provided with dowry money. Needless to say infant mortality decreased dramatically.

Another example of note was in a small 19th century village in the South of France, where infant mortality was high . The mayor developed a program which provided for physicians supervised free health care to all pregnant women, supplied cows for milk for the children and for breastfeeding mothers. A financial bonus was also given to mothers whose infants lived to one year. Infant mortality dropped to zero.

Feeding mothers became popular in England at the time of the Boer war, when it was found that most of the soldiers that enlisted were unhealthy. To save the nation's boys, supplementary feeding programs appeared for the first time in MCH clinics. Milk supplements were given to mothers solely to improve the nutrition of the fetus and hopefully the infant. This concern over infant mortality has been longstanding and recognition of the interrelationship between the infant's health and that of the mother, while acknowledged, seldom receives program support. France now has a national program for pregnant women which includes free medical care, antenatal care, and $160/month subsidy to all mothers who make the requisite number of antenatal visits irrespective of their financial status. Postnatal care is provided and mothers are also offered ten physical therapy sessions so that post delivery they can get back in shape. The state also provides child care creches and has trained a special cadre of nurse midwives for delivery of the program.

Fortunately child survival programs are beginning to realize that without a mother there is no child survival and no breastfeeding. Recognition that the mother's health and wellbeing is key to child survival is fortunately increasing, but there is still not enough money allocated for maternal programs. At the 1978 WHO-UNICEF International conference on Primary Health Care at Alma Ata, a comprehensive strategy to achieve "health for all" was identified. Maternal and child health was seen as a primary component and included preventive services such as promotion of proper nutrition, safe water sanitation, immunizations and health education, as well as curative care, including treating common diseases and injuries.

The potential of simple, available technologies in countering high infant and young child mortality is now emphasized in developing countries. This combined approach has the acronym GOBI-FFF for growth monitoring, oral rehydration, breastfeeding, immunizations, feeding (both mother and weanling), family planning, and female education. Key to the success of these programs has been the involvement of the community, training volunteers and integration of activities. Only when there is continuity of services and curative medicine practiced, along with preventive, the effectiveness of the interventions is maximized.

In the time I have available I will try and illustrate how by relatively simple techniques lives have been saved. Many similar programs could be implemented in the USA. People living in poverty lack resources, have poor transportation, high illiteracy rates, bad housing and poor nutrition, as well as lack empowerment, irrespective of whether they live in developed or developing countries. Given the resources and budgets of developing countries much has been done.

SOME ILLUSTRATIVE PROGRAMS AND STRATEGIES - OPPORTUNITIES THE US MISSED

Growth monitoring

Growth charts for the regular monitoring and recording of children's weights and height for age are used effectively in many countries for tracking the well child and for delivering services. What has also been most effective is the involvement of mothers even if illiterate.

The growth chart often has educational messages, eg. Oral Rehydration Therapy (ORT) or breastfeeding. This chart also records immunizations, illnesses and relevant area specific information. It is a valuable tool, if used correctly. In the Matinga village project in Kenya, an immunization program used growth charts. When a fall off in attendance occurred, a community meeting was held and mothers explained their constraints. Through community efforts and resources a facility was developed close to the village where local health workers and traditional birth attendants were trained to conduct growth monitoring and referral of children in need of other services. The local health workers identified the children whose immunizations were incomplete and followed up. It became a goal of the community to have good records.

Another example is the mothers clubs in Bangladesh where, in remote rural villages, mothers are taught to use the growth chart and proudly carry it from home to under-the-tree clinics. School aged children act as recorders and the mothers weigh their children, learn the linkages between diet, health and growth. Through these programs there are many positive spinoffs. Women exchange information, may join hands for extra income projects, have shared childcare and organize to act as agents of change. There is data to show that infant mortality and morbidity can be markedly reduced in this way.

I have witnessed many missed opportunities in this country. For instance, in a mayor teaching hospital in the US a large number of children were labelled as "failure to thrive" . It is a sad reflection on the system that growth charts were not available for these children, but $25,000 of endocrine tests per child were recorded. A lot can be learned from the growth chart if used as a clinical tool and the cost is minimal.

Growth monitoring requires supervision, training of health workers or volunteers, accurate scales and careful charting. Most of all for effective programs, there has to be an exchange between the health worker and the mother which involves more than just recording weight. It requires counselling and referral.

The common measure used is weight for age. Height is more difficult to measure and a number of different appliances have been made for this purpose. Where weight is not measured then arm circumference is a valuable screening technique for at-risk mothers. Field scales: The commonest scale is the Salter spring scale.
Growth charts: A variety of charts are available using different reference populations. Currently the one most frequently used is the NCHS-Fels reference population data. There is a need for growth charts for breastfed and lowbirthweight infants.

Oral Rehydration

Dehydration due to severe diarrheal disease is a major killer of children under 5 years of age. Until the late 60s drugs and intravenous fluids were the accepted treatment for diarrheal dehydration and required special facilities, highly trained staff and enormous quantities of fluid. The discovery that glucose dramatically enhances the absorption of water and salt , even in a damaged bowel, has revolutionized the technology needed for rehydration. ORT has proven so safe and effective that it can be given in the home by nearly anyone with minimal training. Once the routine use of ORT is established mortality from diarrheal dehydration can be virtually eliminated. Severe cases still require IV or intragastric fluid but even in these cases ORS can be lifesaving when it is used as an early stopgap measure, especially in unserved areas. Where the problem is widespread rehydration centres have been established.

Mothers and chid caretakers are taught to give oral rehydration if a child has three or more watery stools per day. As a rough measure, for each stool passed, two cups of ORT should be given. Exclusive breastfeeding is preventive against diarrhea. Infants who develop diarrhea and are being breastfed should continue to be breastfed.

In young patients with severe diarrhea, cup and spoon feeding in small quantities is recommended to reduce the risk of vomiting. Mothers should continue breastfeeding and children should be given as much food as can be tolerated in addition to ORS.
Oral Rehydration Solution can be prepared commercially or at home. WHO recommends

a rehydration formula consisting of sodium chloride (3.5gms); sodium bicarbonate (2.5gms); potassium chloride (1.5gms and glucose (20gms.) per litre of water.
For home preparation of one litre of ORS add 8 teaspoons of sugar, and one teaspoon of salt to 5 cups of water. Prepackaged mixes are available at low cost for use in homes and health centres. Where there are no packets of ORS formula available innovative methods of measuring salt sugar and water for home mixes are available. There is the pinch and scoop method makes use of a three finger pinch of salt and a scoop of sugar to barely cover the palm of the hand, per one drinking glass of water. A special plastic spoon is also available in some programs with one end for sugar and the other for salt. Problems of hypernatramemia, although rare, must be guarded against. Simple technology and trained health aides, or volunteers, and mothers provide an opportunity to lower mortality on a wide scale.

Recently scientists became aware of the fact that mothers use food based remedies such as rice water, carrot, bean or chicken soup for diarrhea. Studies show that cereal based ORT not only is effective against dehydration but cuts the number of diarrheal stools. Diarrheal control programs are widespread and take many forms.

In markets, work sites along roadsides in Lusaka, Zambia, popular theatre groups promote ORT labelled *Madzi-a-Mayo*, water of life; ORT is not the solution to infant diarrhea; it is a remedy. For prevention programs have been developed to promote exclusive breastfeeding, clean sources of water, adequate sanitation and personal hygiene education.

Currently 110 countries have diarrheal disease control programs. Honduras and Egypt have used social marketing in addition to training health workers, doctors and mothers. They have been very successful in lowering infant mortality, decreasing use of IV therapy and hospitalizations. Diarrheal related mortality among Egyptian under-fives has declined by more than 50% since 1983. In Lesotho the number of diarrhea cases treated in 6 hospitals declined by one third in one year (1987-1988).

Efforts are centered around reaching the care givers on the frontline-usually mothers, and providing them with information and means of action. Focus group discussions, not health lectures, have proven effective. Health workers training has been aimed at providing consistent health messages and improving the quality of care.

Currently various projects are assessing oral rehydration based on foods such as rice, corn and millet with salt. The results are promising, especially as the cost is low, these foods reduce the number of stools and this is important to mothers. At a meeting organized by the International Child Health foundation in Karachi in 1989 evidence was presented showing that food based solutions reduced the volume and duration of diarrhea by 25-50%. The proponents of the ORT will move to this line of thinking as the current costs of production for ORT formula and making it available to the large number of the poorest of the poor in developing countries is impractical.

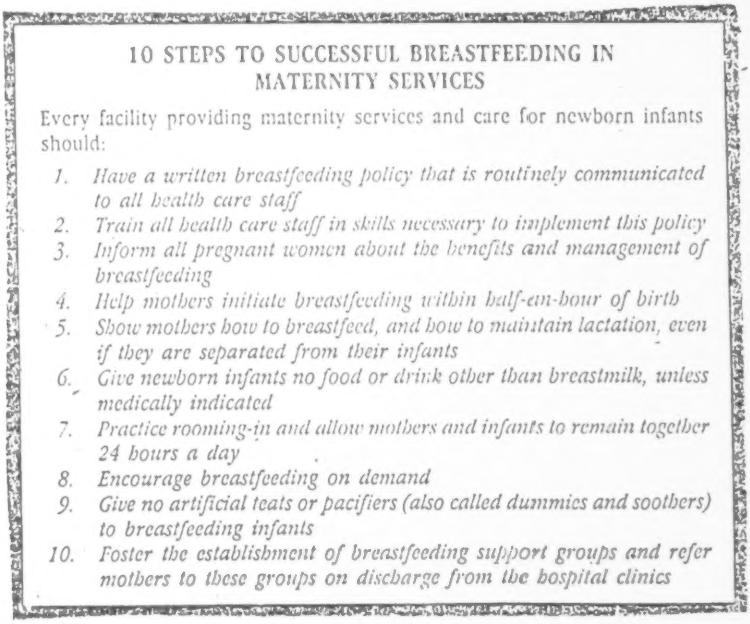
Diarrhea and infection are interrelated and malnutrition is part of this vicious cycle. Integration of programs is important to avoid lost opportunities.

Breastfeeding

Exclusive breastfeeding for the first 4-6 months of a child's life is probably the most cost effective child survival intervention available. Breastfeeding is the focal point of infant health and, in many parts of the world, an infant's passport to life. Breastmilk is important for adequate growth; provides protection against some infections, is a passive form of immunization for the baby during the first nine months against measles, polio, cholera, rotavirus , malaria, acute respiratory disease, otitis media; it prevents diarrhea and should be part of oral rehydration therapy; it is the natural form of family planning and by adding to weaning foods it forms part of weaning food multimixes.

Exclusively breastfed infants are two and a half times less likely to become ill and two times less likely to die. It has been estimated that more than one million infants would be saved if they were only exclusively breastfed in the first 4-6 months. It should be noted that exclusive breastfeeding includes colostrum, that is, the first milk.
Breastfeeding has been declining due to a number of factors including indolence of health workers and aggressive marketing practices of formula companies. A concerted effort is being made by the WHO/USAID and UNICEF to promote and protect breastfeeding worldwide.

1. Training of health professionals and health workers in breastfeeding management.
2. Changing hospital practices. In Honduras, Bangladesh, Jordan, Philippines and Brazil, national efforts are being made to increase the incidence of exclusive breastfeeding and duration and include a ten step program in maternity services.



10 STEPS TO SUCCESSFUL BREASTFEEDING IN MATERNITY SERVICES

Every facility providing maternity services and care for newborn infants should:

1. *Have a written breastfeeding policy that is routinely communicated to all health care staff*
2. *Train all health care staff in skills necessary to implement this policy*
3. *Inform all pregnant women about the benefits and management of breastfeeding*
4. *Help mothers initiate breastfeeding within half-an-hour of birth*
5. *Show mothers how to breastfeed, and how to maintain lactation, even if they are separated from their infants*
6. *Give newborn infants no food or drink other than breastmilk, unless medically indicated*
7. *Practice rooming-in and allow mothers and infants to remain together 24 hours a day*
8. *Encourage breastfeeding on demand*
9. *Give no artificial teats or pacifiers (also called dummies and soothers) to breastfeeding infants*
10. *Foster the establishment of breastfeeding support groups and refer mothers to these groups on discharge from the hospital clinics*

3. Developing mother to mother support groups
4. Outreach programs for poor women who do not have access to the formal health care sector
5. Use of mass media and social marketing
6. Encouraging consumer activist groups
7. Legal measures to ensure maternity and paternity rights
8. Development of lactation management centres
9. New educational materials
10. Creating work settings conducive to breastfeeding.

Immunizations

It is a global policy that vaccinations be available to eligible infants and children and women of childbearing age at every contact they have with the health system. Failure to immunize a child is considered a loss. Surveys have been conducted for ways to increase coverage. In Honduras it was found that 45% of clinic visits failed to utilize vaccinations. Despite the fact diarrhea and infections are no longer contraindications to vaccinations they were withheld. In Pakistan, for instance, infants with coughs or colds or malnourished have been denied "shots".

A successful program that illustrates ways of increasing coverage is the Rotary Club program in Nigeria and India. Social mobilization is key to the Polioplus program which these two countries and 88 other developing countries have put into practice. In each country an army of volunteers, mostly rotarians, is recruited and trained in immunization tasks, such as baby tracking, health education and record keeping. The volunteers work with political and health leaders to organize and conduct immunization drives. The network is solidly built with committees and directors at state and national levels. The volunteers are trained in community level workshops. Sustainability of volunteers is a problem, but ways to motivate these workers are being devised.

Some countries have raised immunization coverage through national campaigns, but national campaigns are not enough. In addition to national campaigns, Nigeria established 4,000 new health units to sustain the program and as a result increased the percentage of fully immunized children (12-20 months) within 6 months from 20% to 38%. National leader's support has also been invoked. A ministry of education program in Senegal links newborns with middleschool children who follow their "adopted babies" through the vaccination schedule. This hopefully will produce not only vaccinated infants but a generation of school children aware of the importance of immunization.

Many countries have significantly raised coverage rates through political, community and grassroots support. By not paying close attention to social and qualitative factors and the logistics of health care, opportunities are missed. Integrating the services for the family and providing both curative and preventive services is essential.

Maternal Health and Child Survival

The mother is inextricably linked to the health and survival of her child. It has always been clear to women in the field, but not always to bureaucratic men, that several factors are related to the maternal side of the equation, which need commitment and attention. Maternal mortality rates in the developing world are 200 times higher than in North America. A women's chance of dying from pregnancy related causes is 1 in 25 or more, compared to 1 in 15,000 in the United States. A mother's death in childbirth usually leads to her infants death. It has been documented that in Bangladesh a motherless child has a 5% chance of surviving just one year. In addition, pregnant women who are undernourished and in poor health are more likely to deliver low birth weight infants. These infants are more vulnerable to infection and form a high percentage of neonatal deaths - as much as 40%. Low birthweight can be prevented with prenatal care, targeted feeding, safe delivery and postnatal care.

Studies on the quality of prenatal care and of women's attitudes to the quality of service is currently under examination in countries such as Jamaica, Peru and Haiti. Following the lead of Dr. Shah in India, efforts to reduce maternal morbidity and mortality eg.in Kenya include the development of mother child health cards by AMREF. These cards include information on the progress of the pregnancy, the mother's weight gain and other acceptable indicators of her health status. The cards heighten staff interest in the mothers' health, serve to identify "at risk" mothers and provide sustained follow up care. Save the Children Foundation has also developed a card in the Gambia for monitoring maternal health and nutrition. Although these developments are gratifying, in most countries, both developed and underdeveloped, MCH programs see mothers as a vector and pay little attention to their health nutrition and status as an equal member of society.

One other factor needs to be borne in mind in the 1990s. Teenagers have longer labors, higher mortality rates and more premature infants. To change this, at Coronation Hospital in Johannesburg, South Africa, middle aged "common sense" women have been allocated to pregnant teenagers and they stay with these teenagers throughout labor and delivery as "aunties". Preliminary results indicate that the practical and emotional support they provide, has reduced the duration of labor, complications and incidence of prematurity. The program has many possibilities and offers an opportunity for us in the USA.

In conclusion much has been learned about what is "doable" with the poorest of the poor and the most cost effective methods of lowering maternal and infant mortality. It appears that it is critical to set priorities based on an analysis of the local situation and it is import to inform the community of actions taken and progress accomplished. Listening to the community is key, because they hold the answer for their own special problems. Integration of programs is essential. Special days for special programs dilutes the effort and confuses the community. Quality of care, is of course, also imperative. Many lessons have been learned in developing countries. We in the US, with all our resources and wealth we can do much better. We much change our vision and work hand in hand with the community and take the opportunities we have to prevent unnecessary illness and death. We must rise to the challenge and not loose the opportunity.

SINAPS PROJECT-INTEGRATED

Affordable activities were selected for improving the health and nutrition of mothers and children in a rural Guatemalan population. Activities included immunizations, providing oral rehydration solution; birth surveillance on recorded coupons; nutritional supplementation of malnourished mothers and infants; breastfeeding promotion and support;family planning; improved sanitation through latrine construction.

Rural health promoters and traditional birth attendants were trained as primary care workers, and were supervised by Rural Health Technicians. Most of the training was in the community- short term and continuous. Coverage of the community was achieved through home visits for emergency first aid and follow-up of malnourished or sick children. Visits were made at 2 monthly intervals for delivery of family planning supplies and data collection. Community meetings were held 2 monthly for detection of malnutrition and for immunizations. Although training costs were initially high especially cost per diem for trainers it evened out the next year.

THE INTEGRATED CHILD DEVELOPMENT SERVICE (ICDS)

This program in India delivers services at a community centre called angwadi- literally courtyard- through community health workers. The pilot program was most successful in lowering IMR and malnutrition . In the rural areas malnutrition was halved and in urban blocks it decreased by 75% The program has been expanded nationally.

The success of the program has been attributed to:

1.Integrated nutrition, health and educational services.
2. Inclusion of mothers and pregnant women in the program
3.Provision of "on the spot" nutritional supplements for chidren up to 6 years old and for pregnant and lactating women(300kcal carbohydrate.15g protein, iron , folic acid)
4.Delivery of services through female residents specially trained for the work and receiving on the job training.
5.participation by the academic community in monitoring , evaluating , providing continued education and supervision.

the program continues to improve finding solutions for problems identified on a day by day basis. When they found for example, a proportion of unimmunized and malnourished chidren their investigation revealed that reasons included parental suspicion,lack of safe drinking water with frequent diarrheal episodes, interuppted feeding programs because of impassible roads in the rainy season. Through intersectoral programs some of these problems were solved.

SUMMARY OF DOABLE OPPORTUNITIES

1. Know the community and work with them.

2. Monitor activities for regular feedback to health workers and community to set priorities.

3. Make sure you are counting correctly. eg.

    i) exclusive breastfeeding is different from breastfeeding

    ii) number of vaccinations given = given number of children vaccinated completely

    iii) number of packages of ORS handed out = number of rehydrated diarrheal cases.

4. Growth chart importance is not where you are on the chart, but if the individual curve rises.

5. Intergration of activities is important and intersectoral networking.

6. Training low level health workers and volunteers is cost effective and increases coverage.

7. Self sufficiency slower to establish is sustainable. Dependency is not sustainable.

8. Organization of women is critical.

PREPARED STATEMENT OF SANDRA L. HUFFMAN, PRESIDENT, CENTER TO PREVENT CHILDHOOD MALNUTRITION, BETHESDA, MD

Introduction

Most infant deaths in developing countries are preventable. The major causes of death include diarrhea, acute respiratory tract infections (ARI), vaccine preventable diseases, and malnutrition including low birth weight. Over the last ten years, there has been a concerted effort on the part of US Agency for International Development, UNICEF and the World Health Organization to focus efforts on some of these health problems. The emphasis of this "Child Survival Program" has been on selective preventive measures to avert deaths among infants caused by diarrhea and vaccine preventable diseases.

In the quest for reductions in the rates of infant mortality in the US, we have much to learn from both the experiences in coalescing political will to solve the problems of infant mortality shown by developing countries over the last 10 years, as well as some of the specific methods used to do so. Some of these interventions include breastfeeding promotion, oral rehydration therapy, mass immunization programs, and the use of volunteer community health promoters.

Breastfeeding Promotion

Breastfeeding is especially important in developing countries because it prevents diarrhea and acute respiratory tract infections (the most frequent causes of death). It also plays an important role in supporting optimal child growth. It has had a major role in reducing infant mortality throughout the world. Estimates made by the Center to Prevent Childhood Malnutrition suggest that over 7 million infants who would have died from diarrhea or ARI are currently saved by breastfeeding (Levine and Huffman, 1990). In other words, if breastfeeding were to decline to levels seen in the US, it would results in huge increases in infant mortality.

During the 1970s we did observe declines in breastfeeding in many developing associated with urbanization and subsequent increases in the proportion of births occurring in Western style hospitals. We now have numerous examples of the role that improving hospital practices surrounding delivery can increase breastfeeding rates. For example, in Honduras and Panama US AID supported projects resulted in major increases in breastfeeding rates, with associated improvements in infant health (Popkin et al,1990; Huffman and Panagides, 1990). In fact now, practices are better for poor women in many urban hospitals in developing countries than we see here in the Nation's Capitol. Additionally, hospital practices for low income women in the U.S. (who are in most need of breastfeeding protective effects) are generally worse than those available to upper income women.

While the promotion of practices that keep the mother and child together after delivery (known as rooming-in) and support her to breastfeed can have a major impact on breastfeeding practices, they can also reduce hospital costs associated with delivery. For example, one hospital in Manilla, Philippines reported that it would take an 8% increase in hospital costs to revert to hospital practices where rooming-in was not practiced, or an annual cost of $310,000 per year (US AID, 1990). Similar substantial savings are likely in the US, though little has been done to promote such changes and to document their impacts. This is especially important in these times of financial crises in health care.

Many developing countries have also taken the lead by providing nutritional support for women during pregnancy and lactation, rather than providing substitute milk to young infants. We have much to consider in our priorities in the WIC program which results in over 1/3 of all expenditures for infant formula, with minimal amounts allocated for breastfeeding promotion.

Oral rehydration Solution

The principal reason infants die from diarrhea is because of dehydration that can occur with diarrhea. A simple sugar and salt based solution will maintain fluid balance, and prevent death. In 1975 when I was working in Bangladesh, this sugar/salt solution (oral rehydration therapy) for prevention of dehydration due to diarrhea was only being first tried within communities. Now its availability has increased to an average of 60% of the populations in developing countries (WHO, 1990). This led not only to tremendous decreases in deaths, but it also has put treatment of a common childhood illness in the hands of families, that do not have access to health facilities.

In the US, recent studies have shown that between 1973 and 1983, ~~an average~~ of 500 American children, mostly infants, died of acute diarrhea (Ho et al, 1988). Black infants were more likely to die of diarrhea than white infants, and infants in the South had the highest mortality rates. Families most at risk included those whose mothers were young, poor and with low levels of education, those least likely to have breastfed, an important factor that prevents diarrhea (Cunningham, 1989).

The US can learn from the experiences of use of oral rehydration therapy among poor families in developing countries. If illiterate women can be taught to use ORS for diarrhea, certainly physicians in the US can be taught how to use it in outpatient clinics in hospitals. This would lead to major reductions in hospital treatment costs for the 200,000 children hospitalized each year with diarrhea. Medical costs for the treatment of diarrhea , which mostly includes intra-venous solution, have been estimated at $560 million (International Child Health Foundation, 1990). Mothers can be taught to give their children ORS, to prevent more severe diarrhea requiring medical treatment. The International Child Health Foundation has recently initiated a national campaign to increase the use of ORS with particular emphasis on Southern States. The campaign will use mass media and health outreach programs.

A recent innovation that is proving successful in not only preventing dehydration, but reducing the duration of diarrhea is the use of cereal based ORS, in contrast that sugar based solutions (Aga Khan Foundation/International Child Health Foundation, 1990). This holds promise for US children as well.

Immunization Campaigns

In the early 1980s, when WHO was just beginning its Expanded Program of Immunization (EPI), vaccines were reaching only 10-20% of the world's children (Report to Congress, 1990). On average now in developing countries, 67% of infants are fully immunized against diphtheria, whooping cough, tetanus and polio. Poor countries such as Pakistan and Zambia have reached a coverage of 80% for these illnesses as well as measles and tuberculosis. Compare these figures to minority children in the US in 1985, where only 57% of nonwhite toddlers were fully immunized against polio, 69% against DPT, and 75% against measles, compared to 80%, 88%, and 83% for white children (Hughes et al, 1989).
These rates are even lower than those reported five years earlier, so we are losing rather than gaining ground.

A global commitment to eradicating these illnesses has been made. A similar commitment needs to be made here in the US with particular attention focused on poor and minority children. Countries such as Peru, Colombia and Brazil have emphasized national vaccination days as a means to coalesce political support and enhance immunization coverage along with back-up during the rest of the year with reinforced preventive health services (Task Force for Child Survival, 1986).

In most developing countries, mothers are given immunization cards/growth charts that are used to record dates of immunization. These cards are also used to monitor child growth and development so that mothers can learn how their children are progressing, in order that they can take necessary action if growth is inadequate. Immunizations are generally free.

Contrast this to the current situation in the US, where measles epidemics have arisen but the current cost of a measles vaccine is $35 at a private physician. Although immunizations are often provided free of charge to poor families, the use of public health clinics necessitates that they have access, time, language skills, money for transport and general knowledge about the needed vaccine schedule to seek immunizations, in overcrowded public clinics. This problem is accentuated by different clinics providing different services, so that a mother receiving prenatal care or picking up her WIC vouchers, may not be able to have her child immunized during the same visit. The role of "one-stop shopping" is apparent here as well.

Another important move in developing countries is the promotion of colostrum (the breastmilk secreted during the first few days of life, which contains high amounts of anti-infective properties) as the "first vaccine" for infants. Colostrum is nature's way of protecting the vulnerable infant during the first days of life, and it is especially important for infants born at low birth weight in the US as well as developing countries. The promotion of breastfeeding should therefore be seen as another element to enhance protection from diseases, as do vaccines.

Volunteer Community Health Workers

Because of the lack of resources and limited funds for health care, many developing countries have trained local community members to provide preventive health care services. Their activities have ranged from educating parents about the need for immunizations, provision of oral rehydration solution, information on prenatal care and delivery, and general first aid. Home visiting to families at risk (for example pregnant women, or families with infants, or families with malnourished children) often plays a major part of their responsibilities. By living within their communities and knowing the families' individual circumstances, they can help address the social causes of ill health as well as promote improved health conditions.

In Guatemala and Mexico, UNICEF is supporting programs to train women in communities to provide health education to neighboring families and help them in drug prevention and treatment, as well as to prevent illnesses. The Urban Volunteers Program in Dhaka Bangladesh, trains the poorest women in urban slums and bustees to provide health services to their neighbors. Income generation has also become a part of the program, because women need the additional income to feed their families. The issue of payment is of concern for volunteers throughout the world, and most programs have developed some means of compensation, either through donations or income-generation activities.

Not only have such workers been essential for reducing illness within their communities, but equally important, this role has led to tremendous changes in the health workers themselves. By increasing their knowledge in health, community volunteers have gained self-esteem and social status within their communities that has led to their being role models for other women in their communities.

In a program that the Center to Prevent Childhood Malnutrition is supporting in conjunction with the Tennessee WIC program, where low income women work as peer counselors in their communities to promote breastfeeding, the women have expanded the effort to include other health interventions as well. Increases in self-esteem of the peer counselors has been an important outcome of the program.

Political Mobilization

How have developing countries made such progress in such a short time? Political will was mobilized to advocate these changes, and funding was made available to implement the needed interventions. For example, promotion of breastfeeding changes in hospital practices often came as part of nationwide campaigns which include training for health professionals. Increased availability of ORS was a result of international interest and financial support for the production and distribution of ORS packets in conjunction with education of health professionals and the public. Immunization campaigns resulted from mobilization of national leaders to divert resources for mass campaigns and continuous services, with international funding an important ingredient.

We need to mobilize political support in this country as well, as with the impetus of the U.N. Summit on Children, we have the opening. Experiences from developing countries with devastating economic and social conditions show that it is possible.

References

Aga Khan Foundation/International Child Health Foundation (1990). Cereal Based oral rehydration therapy for diarrhoea. Geneva, Switzerland.

Cunningham, A.S. (1989) Diarrheal deaths in American Children. Journal of the American Medical Association 261(18):2633.

Ho, M, Glass, R.I., Pinsky, et al. (1988). Diarrheal deaths in American Children: are they preventable? Journal of the American Medical Association 261(18):2633.

Hughes, D., Johnson, K., Rosenbaum, S., Liu, J. (1989). The Health of America's Children. Maternal and Child Health Data Book. Adolescent Pregnancy Prevention: Prenatal Care Campaign. Children's Defense Fund, Washington, D.C.

Huffman, S.L. and Panagides, D. (1990). Breastfeeding promotion in Central American: High impact at low cost. Center to Prevent Childhood Malnutrition, Bethesda, MD. and the Academy for Educational Development.

International Child Health Foundation Newsletter. (1990) National ORT Project for savings of lives. Issue 5. Columbia, Md.

Levine, R. and Huffman, S.(1990) The Economic Value of Breastfeeding At The National, Public Sector, Hospital, and Household Level. Center to Prevent Childhood Malnutrition, Bethesda, MD.

Levine, R., Huffman, S., Labbok, M., Shelton, J. (1990). Breastfeeding Saves Lives: An Estimate of Breastfeeding-Related Infant Survival. Center to Prevent Childhood Malnutrition, Bethesda, MD.

Popkin, B. et al. (1990) An evaluation of of a National breastfeeding promotion program in Honduras. Journal of Biosocial Sciences. Oct. 1990.

Task Force on Child Survival (1986). Protecting the world's children. "Bellagio II" at Cartagena, Colombia. Conference report. Decateur, Ga.

U.S. Agency for International Development (1990). Breastfeeding: A Report on A.I.D. Programs. Washington, D.C.

U.S. Agency for International Development (1990) Child Survival. Fifth Report to Congress on the USAID Program. USAID, Washington, D.C.

World Health Organization (1990). Programme for Control of Diarrhoeal Diseases. Seventh Programme Report 1988-1989. WHO, Geneva.

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